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Nutritional Information

	Units	Per 60g	per serve %RDI★	per 100g
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	kcal	227	11	378
Protein	**g**	**14.6**	**29**	**24.4**
Fat	g	1.92	3	3.2
Carbohydrate	**g**	**37**	**12**	**61.7**
Ash	g	4.32		7.2
Moisture	g	2.1		3.5
Vitamin A	**IU**	**702**	**35**	**1170**
Vitamin B6	**mg**	**0.48**	**30**	**0.8**
Vitamin B12	**µg**	**0.84**	**42**	**1.4**
Vitamin C	**mg**	**19.8**	**50**	**33**
Vitamin D	**IU**	**198**	**50**	**330**
Vitamin E	**mg**	**4.08**	**41**	**6.8**
Biotin	µg	4.98	17	8.3
Niacin	mg	4.98	50	8.3
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Riboflavin	mg	0.852	50	1.42
Choline	mg	57		95
Calcium	**mg**	**800**	**100**	**1330**
Copper	µg	462	16	770
Iodine	µg	60	40	100
Iron	**mg**	**3.12**	**26**	**5.2**
Magnesium	mg	81	25	135
Manganese	µg	702	14	1170
Phosphorus	mg	570	57	950
Zinc	mg	3.12	26	5.2
Potassium	**mg**	**840**		**1400**
Sodium	mg	180	7	300

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1. Gardasil Abridged Prescribing Information. 2014.
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President's Message

It is with great pleasure I take this opportunity to be able to express my sincere appreciation to the IMPA in publishing the 2016 Journal (Volume 10) again this year.

I hope the IMPA would be able to publish this journal annually, as was contemplated when the first volume was launched.

The IMPA journal supports our members to receive and express their opinion on several topics of significance, specially in the field of medicine. I wish to thank the editor Prof. I.Joel Fernando along with the members of the Editorial Board for having devoted lots of their time and efforts in compiling this journal.

I wish to thank all those who have submitted article for this journal. I also wish to thank our administration officer Mrs. Champa Silva for her untiring efforts in coordinating all the work required in printing this journal.

I appreciate the efforts of the printer AK2PRO for obliging us always in producing this excellent journal.

Finally, I thank the sponsors and advertisers for all the support and assistance provided to publish this journal and wish the IMPA the very best in all the future activities.

Dr.A.H.A.Hazari

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Content

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Editorial

The Government adopted the National Medicines Regulatory Authority (NMRA) Act in March last year and a few weeks ago decreed the first definitive operational regulation under the Provisions of the new Act. The Minister of Health prescribed the Maximum Retail Prices (MRPs) for a total of 48 categories of essential medicines, and temporarily frozen the prices of all medicines until further notice. We have been informed that these medicines under price regulation will cover many of the common disease entities and comprise a fairly large volume of the medicines that are used most commonly by the population. This should help to address a basic human need, to make medicines more affordable to the people, particularly the poorer segment of our society. The prices of the medicines which are currently above the MRP will need to be adjusted down to the MRP for them to remain in the market. We have been informed by the Ministry that most of the pharma traders have agreed to comply with this requirement which is very salutary. But it is also possible that a few may contemplate withdrawing from the local market even temporarily to make suitable business plans. However we have been assured that there will be an adequate choice of quality assured drugs for the doctors and the patients.

We like to emphasize to the authorities that a few other key improvements and additional actions need that to be undertaken alongside price control. The Minister of Health has the important task of ensuring the quality of all the medicines that are available in the market, in particular those under the new price control mechanism. We also would like to see further improvements in the prescription practices of the doctors themselves so that they are as far as possible rational and evidence based. The patients too need to be educated on the rational use of medicines and the common

This context therefore provides us with an appropriate opportunity to remind ourselves of the key recommendations that were made at a "Symposium on better prescribing", organized by the IMPA CME Programme on 30th November 1997, (with an invitation conveyed in verse!), which discussed issues related to Patient centred approach to prescribing, Professionalism in prescription writing, and Pharmacy practice for better information and instruction. The guidelines agreed upon at this symposium are well worth another visit by all family physicians. Dr. Percy Motha in this issue of the journal has drawn our attention to some of the key considerations in this regard.

In conclusion I wish to underline the responsibility thrust on all of us to be cautiously sanguine of the new price control scheme, lend our support as may be needed but also remain constantly vigilant to ensure that it will help to deliver the best results for our patients.

Prof. I. Joel Fernando

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Safe Prescribing and Dispensing in General Practice - Ensuring Patient Safety

Dr. Percy Motha

I am in my 75th year, passed out from Peradeniya Medical faculty in 1967. After working in government service for 8 years I started working as a general Practitioner since 1976. I am in full time general practice for the last 39 years. I give hereunder some of the methods adopted by me while prescribing, dispensing & administering drugs to my clients which I believe ensures patient safety.

I am sure most of the General Practitioners are already practicing whatever I am going to mention below. Hence this could be reinforcement for them. However, I believe some will gain from reading this article

To begin with when I write a prescription I go over it once more to make sure whether I have written correctly what I wanted to prescribe, in the correct strength, dosage and legible enough. Further I reflect for a moment whether I have given the appropriate drugs for the illness(es) concerned.

Prescriptions given to my clients to purchase drugs from outside pharmacies are almost always written in capital letters to ensure clarity. Further in these outside prescriptions, my seal / frank printed on the prescription contains both my office & home contact numbers so that the pharmacist could check with me anything that is not clear in the prescription during 'off hours' too.

With all these precautions, regarding outside prescriptions, I describe here under an interesting and an embarrassing experience that I had. I 'wrote' a prescription for Chloramphenicol 'eye drops' for a patient with conjunctivitis to be bought from an outside pharmacy. After some time this patient calls me from a pharmacy that he got the drug and that on the box of this drug there is a picture of an ear. I thought that the pharmacist has given the wrong drug, that Instead of the eye drops he had given the ear drops. Then I told the client to return it back to the pharmacist and go to another pharmacy to buy same. Same thing happened there too. Then I asked him to hand over the phone to the pharmacist and when I asked why is that he had given the ear drops as I have ordered the eye drops. To my embarrassment the pharmacist made me understand that I have ordered the ear drops. On that I apologized to him and told him to give the eye drops to my client. I apologized to my client too for this lapse. After this incident I made it mandatory for me to go thro the prescription DEFINITELY TWICE to make sure it is OK.

Further before I write the prescription I glance thro the first page of the patients' record where the problems list of the patient, the list of drugs they are taking for same and any history of allergy or undesirable side effects of the drugs are recorded. This will make sure that the wrong drugs are not prescribed, e.g: Beta blocker for the asthmatic and Salbutamol for the patient who already experienced tremors with same etc. This will avoid drug interactions too. If the patient is not my regular client and as I have no past record of him, further to the

problem he has now I ask him whether he is suffering from any other conditions, the drugs he is taking for same and any history of allergy or undesirable side effects for any drug before I prescribe.

Next while dispensing drugs in my clinic the dispensers are trained to see the first page in the Patient's records and see whether any allergy or undesirable side effects to drugs are documented there. If so, whether my prescription is compatible with the information given there. There are many instances where they had pointed to me the errors committed by me and I had to correct same. Further in my clinic most of the time two dispensers work at a time. Being so, each time they dispense drugs to the patients both have to go thro the prescription, the drugs prepared to be given to the patient and the instructions written on the medical envelopes / labels to make sure everything is O.K.

In my clinic, Injections are administered only by me. Before administering same both a dispenser & I check whether the injection to be administered is correct & within the expiry date. When this article was circulated among some of my colleagues, for their opinion, before finalizing same, two of my colleagues shared with me embarrassing experiences in this regard. One of them reported that he had given the intended injection, fortunately the tetanus toxoid, to the wrong person. On this he apologized to this person and did not charge for the injection In the other instance, a client, a female employee from a shop in the area, accompanied by a co- female employee came to the G.P. and said that she has come for the 'Devani Injectionekata' (for the second injection).Unfortunately she had forgotten to bring the note given to her by the doctor during the time she had the first injection. She was not intelligent enough to give further information regarding the injection. The doctor thought it must be the tetanus toxoid & gave her the same. When she went to pay for the injection to the cashier she noted that the charge was fairly low compared to the amount paid by her in the first instance. On this she suspected something wrong and came back to the doctor and queried why it is so. At this juncture only she told the doctor that she had come for the 'Pavul Sangvithana' (Depo provera) injection and whether is that the one she got now? May be she didn't want the co-employee who accompanied her to know that. That is why she didn't tell the doctor in the first instance and she believed that the doctor will know it and do the needful. Subsequently the doctor apologised to her and gave the Depo Provera and charged less, deducting the earlier payment. Being so, as pointed out earlier, this further reiterates the importance of two persons to check whether the injection to be given is the correct one and the correct person will be getting it.

Every day, at the end of the morning session one of the dispenser will be refilling the drug containers in the dispensary from the bulk pack stored in a cupboard for day to day use. At that time the dispensers are instructed to check the expiry dates of the drugs to make sure that the drugs dispensed are not outdated. This applies to the bulk syrup bottles too from which individual quantities are doled out to the patients. The drugs that are not fast moving are purchased in small quantities for use. Here too the dispensers are instructed to get the expiry date written on the pack at the time of purchase to ensure same. In this regard I must document that a colleague of mine maintains a drug expiry register which serve this purpose. This is very much welcome.

When allergy or undesirable side effects are experienced by the patients, those patients are given a written document of same to be produced to the doctor each time they go for consultation. Where possible they are advised to type set same in a national identity card sized paper, laminate it so that it will last long & more presentable to the doctor. Further to have same in their purses so that even in case of emergency it will serve the purpose. Further I coax the Intelligent patients to memorize same so that even in the event they forget to bring the card they can 'rattle of' same to the doctor – " Doctor I can't take ventolin , maxolan & Stemetil". ThIs is what exactly one of my regular clients tells me whenever she comes to me for consultation. For that matter she prefers to do this than bring the card. Again to make sure that they won't forget to tell this to the doctor I train them to give this information first to the doctor, even before they talk to the doctor on their illness.

Again when I circulated the initial draft to some of my colleagues for their opinion, another colleague of mine suggested to summarise the above facts at the end of this article so that it will be easy for anyone to remember all these and facilitate easy referral, when necessary. Hence the summary below:

SUMMARY:

1. After writing the prescription:
   a) Go over it once more, to make sure that you have written the intended drug(s), in the correct dosage, strength and it is legible enough.
   b) Make sure that the drugs prescribed are appropriate for the illness concerned, compatible with the problem(s) the client already has and the drugs the client is taking for same.
   c) Check with your / patient held records that you have not prescribed drugs that the patient is allergic to / had undesirable side effects earlier, for same, in the past.
2. Have your contact Nos. in the outside prescriptions so that the pharmacist can contact you and verify with you anything in your prescription that is not clear to him.
3. Before giving an injection make sure that at least two persons check whether the injection to be given is correct, the right person is going to receive it and not outdated.
4. Have mechanisms in your clinic to make sure that the drugs dispensed in your clinic are not out dated.

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Drug Abuse in Sri Lanka - It's Past President and Future

Professor Ravindra Fernando

Introduction

A drug is a substance when taken into the living organism can modify one or more of its functions. Drug abuse may be considered as the use of a drug, usually by self-administration, in a way different from the approved medical or social patterns in a given culture.

Non-medical use of drugs can be for experimentation, recreational use or for their helpful effects, which are not medically approved.

The morbidity from drugs can be due to direct physical or mental pharmacological effects, consequences of the methods used, and the effects of dependence and abstinence.

Drug abuse is use of a drug, usually by self-administration, in a way different from the approved medical or social patterns in a given culture.

Drug dependence is a state characterized by an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means. It is sometimes accompanied by physical dependence and the resulting state is detrimental not only to him, but also to the society.

Addiction is a state characterized by behavioural and other responses that always include a compulsion to take the drug on a continuous or periodic basis in order to experience its psychic effects (psychic dependence) and sometimes to avoid the discomfort of its absence (physical dependence).

Substances can be taken into the body in several ways. Oral ingestion (swallowing), inhalation (breathing in) or smoking, injection into the veins (shooting up), and depositing onto the mucosa (moist skin) of the mouth or nose (snorting) are the methods used by drug addicts.

Sportsmen have abused a variety of agents, such as male hormones and steroids, to enhance muscle mass or improve athletic ability. They have also abused amphetamines to make them feel stronger and to mask pain. This will enable them to continue to play even with injuries. Drug use among sportsmen is still a problem even in Sri Lanka as reported recently.

There are many addictive or dependence producing drugs. They include,

* Alcohol
* Barbiturate type drugs
* Amphetamine, methamphetamine (Estasy) and anti-obesity drugs
* Cannabis or marijuana or ganja
* Cocaine
* Hallucinogens (LSD or Lysergic acid diethylamide, certain mushrooms)
* Khat type – derivatives of plant Catha edulis
* Opiates including heroin
* Volatile solvents
* Pharmaceuticals and new psychoactive substances
* Tobacco products

Alcohol
Alcohol has been produced by humans over 12000 years! Alcohol causes impaired judgment, decreased inhibitions, coma and even death. Effects vary according to body size, amount consumed, time frame of consumption, previous use and pre-existing illnesses. Consumption of alcohol with certain drugs like barbiturates and diazepam can be fatal.

Alcohol causes physical and psychological dependence. It affects the liver, heart, pancreas, stomach and the brain. Chronic alcoholism can cause loss of appetite, social problems and sexual impotence. Alcoholics are more prone to be victims of accidents, suicide and homicide.

Barbiturate type drugs
Barbiturates are depressants of the brain. It can cause relief of tension, mental stress and anxiety with positive feelings of pleasure, calmness, and relaxation. Abusers show loss of motor coordination, decreased self-control, slurred speech, impaired judgment, confusion and drowsiness. Overdose can cause coma, respiratory failure and death.

Amphetamine, methamphetamine (Ecstasy) and anti-obesity drugs
Amphetamines have medical uses for attention deficit disorders, narcolepsy and appetite suppressant (slimming pills). Abuse can cause feeling of well-being, euphoria, increased alertness and energy, improvement of performance, loss of appetite, sweating, dilated pupils, increased heart rate and blood pressure and bizarre, erratic and violent behaviour.

3,4-methylenedioxymethamphetamine (MDMA), also known as Ecstasy, increases all pleasurable sensations. Users have feeling of emotional closeness, increased physical and emotional energy, restlessness, anxiety and hallucinations.

Its serious health effects are increased heart rate and blood pressure, brain damage and liver damage. Ecstasy is popular among participants of discos and night clubs and users have died suddenly in night clubs.

Cannabis or marijuana or ganja
Cannabis is obtained from the plant of the genus Cannabis, which has 60 cannabinoids.

Cannabis is the only drug that grows in Sri Lanka. It is grown illicitly, mostly in the dry zones of the country (in the Eastern and Southern provinces). The estimated land area under cannabis cultivation is nearly 500 hectares. Whenever detected the authorities burn cannabis plantations.

Cannabis without the narcotic content is used in the manufacture of Ayurveda (indigenous) medical preparations. The Ayurveda medical practitioners and the Ayurveda Drugs Corporation are the largest consumers of it. 205 kg of cannabis were used for Ayurveda medicinal purposes in 2009. The Ayurveda Drugs Corporation used cannabis mostly for the production of drugs such as madana modakaya and buddharaja kalkaya.

Cannabis causes euphoria, "high" feeling, pleasurable state of relaxation, enhancement of sensory experiences, increased appetite, impaired performance, sleepiness, confusion and hallucinations.
Cocaine

Cocaine, which is obtained from the plant of genus Erythroxylon coca, is available as a paste, or "Crack" – hard white rocks or flaky material. Cocaine is smoked, sniffed or injected.

It causes euphoria and alertness and postpones hunger and fatigue. Loss of appetite, violent behaviour, hallucinations

and paranoid psychosis are the harmful effects of cocaine. It increases the temperature, heart rate and the blood pressure.

Cocaine abuse leads to perforated nasal septum, keratitis of the eyes, dental erosions, fits, heart muscle disease, coronary artery disease, liver disease, brain hemorrhages and sudden cardiac death.

Early this year chocolates containing cocaine were detected in Colombo and Galle.
Hallucinogens (LSD or Lysergic acid diethylamide, certain mushrooms)

Hallucinogens such as LSD, mescaline (peyote cactus), psilocybin, a mushroom, cause altered state of consciousness and auditory/visual perceptions.

My first experience with mushrooms was when a beautiful girl's body was found in the Brighton cemetery in England. Her boy friend when arrested confessed that they had a violent argument after eating magic mushroom at a restaurant that resulted in her violent death. Post mortem examination confirmed the presence of mushroom in her stomach.

Khat type
These are derivatives of the plant Catha edulis. In 2014, a 21-year- old Sri Lankan arriving from Kenya was arrested at the Bandaranaike International Airport by Customs for trying to smuggle into the country 50 kg of "Khat" plants concealed in two bags. Khat is believed to have been brought to be smuggled to Canada. It is a plant native to the horn of Africa and the Arabian Peninsula. It grows in eastern Africa and southern Arabia and more specifically in Yemen, Ethiopia, Kenya, Madagascar, Somalia, and Tanzania.

The leaves of the plant are chewed, (like Sri Lankans chew betel) resulting in the release of central nervous system stimulants, which resemble amphetamines. This picture shows a Yemeni man chewing Khat.

Opiates
Opiates derived from the plant Papaver somniferum have many alkaloids including morphine. Heroin is a substance synthesized from morphine. Opium is used in the Ayurveda (indigenous) medical pharmacopeia and the government makes it available to Ayurveda Medical Practitioners through Government Hospitals.

Among the heroin users in Sri Lanka, inhalation ("chase the dragon") is the preferred mode of administration. Diazepam, lactose, sucrose, acetaminophen and caffeine are the commonly used adulterants of heroin.
Heroin causes a sense of well-being, euphoria, contentment, detachment from emotional/physical distress and pain relief. It can cause drowsiness, lack of concentration, respiratory depression and even death.

Addiction to heroin causes serious withdrawal symptoms when heroin is not present in blood. Addicts experience anxiety, restlessness, sweating, yawning, runny nose, watering of the eyes, diarrhoea, incontinence of urine, abdominal pains, muscle cramps, hallucinations and delusions.

In Sri Lanka heroin is inhaled. This is much less harmful than intravenous injections. Intravenous drug addicts are more prone to get infections. They die prematurely from acute heroin overdose, inhalation of vomit, acute ulcerative endocarditis, bronchopneumonia and hepatitis. They are more likely meet with accidents and commit suicide.

Volatile solvents
The deliberate inhalation of volatile solvents and aerosols, such as lighter fluid is an increasing problem worldwide. The ready availability, minimal cost and rapid mood-altering features of volatile solvents make these psychoactive substances particularly attractive to young people. Yet, there are clear dangers: Volatile solvents produce effects similar to anaesthetics, and can result in death following acute intoxication. Some volatile solvent users become dependent and develop chronic and disabling problems.

Pharmaceuticals such as benzodiazepines and new psychoactive substances
Pharmaceuticals like diazepam or Valium and some new psychoactive substances such as piperazines, arylamines, tryptamines and synthetic cathinones are addictive.

Tobacco products
All tobacco products are addictive.

THE PAST
Opium figures in most pharmacopoeias of the East and the West, but its sinister reputation as a narcotic has overshadowed its medicinal properties. Opium was native to West Asia, which included Persia and Afghanistan. It was introduced to the East largely by Arab traders, and was known to the Chinese by the ninth century AD. Indians learned of its medicinal properties probably through Arab physicians who came to India with the Mohammedan conquerors in the twelfth century.

In Sri Lanka, opium enjoyed unrestricted sales and uninhibited consumption for centuries like any other article of commerce. It was not till the middle of the nineteenth century that the public became alive to its harmful effects. In response to public protests, the state placed progressively tighter restrictions on the sale and use of opium.

Opium has been used in Ayurvedic medicine in Sri Lanka during the last few centuries for the alleviation of pain and induction of sleep. The earliest reference to its medicinal properties is in Yogaratnakara, an Ayurvedic book written in Sinhala verse in the sixteenth century.

Poppy was never grown in Sri Lanka, and all the opium was imported. During the Portuguese occupation opium was imported by the king of Kandy. During Portuguese occupation in Sri Lanka from 1505, restriction of opium availability was considered one way of manipulating the country.
Dutch occupation of Sri Lanka began in 1658 and in 1675 Dutch issued proclamation prohibiting public trafficking in, among others, salt and Opium.

In 1815, when the British annexed the Kandyan kingdom the British East India Company took over the administration of Ceylon, all import duties were suspended except those on arrack, and opium.

A Bill was passed in 1929 as Poisons, Opium and Dangerous Drugs Ordinance No.17 but notproclaimed on anticipating difficulties in implementation. In 1935 Poisons, Opium and Dangerous Drugs Ordinance was amended.

THE PRESENT
In Sri Lanka, major illicit drugs used today are cannabis and heroin.

Cannabis is widely cultivated in Sri Lanka, with main hubs of activity generally occurring in the drier Eastern, Southern and Uva Provinces. It is estimated that the total area of land under cannabis cultivation

is about 500 hectares, and it is believed that cultivation is on the increase.

Cannabis is the most widely consumed illicit substance in Sri Lanka. The present trends indicate the incidence abuse of cannabis has become a serious problem in our society. A significant increase is reported of in the Kerala variety of Cannabis, known as Kerala Ganja smuggled from India.

Heroin is the second largest and the most commonly consumed opiate in Sri Lanka. Heroin has become a major health and social problem in the country. Based on heroin seizures, the estimated street level supply of heroin in Sri Lanka is estimated to be nearly 800 Kg per annum.

Pharmaceutical drug abuse has recently gained popularity in Sri Lanka and is becoming a major health concern. Pharmaceutical Drug Abuse is defined as taking of prescription drugs, whether obtained by prescription or otherwise, other than in the manner or for the reasons or time period prescribed, or by a person for whom the drug was not prescribed.

However, the non-medical use of pharmaceutical drugs is a unique category of substance use in number of ways and requires attention at different levels.

Advances in the pharmaceutical industry have led to the production of powerful psychoactive medications, which when prescribed appropriately and taken in the manner intended, improve the quality of life of those with specific medical conditions, such as acute pain, epilepsy, dependence on opioids and acute anxiety. However, when used inappropriately, these medications can have serious consequences for health and can lead to dependence.

Therefore, countries face the challenging task of balancing two public health needs: ensuring the availability of these controlled substances for medical purposes and preventing their misuse and diversion.

Pharmaceuticals are abused:

- As drugs (Narcotics and Psycho tropic substance)
- For performance enhancing in sports.
- For crime
  - Murder
  - Rape
  - Robbery
  - Abortion
- To enhance sexual activities.

Controlled pharmaceutical drugs abused in Sri Lanka includes narcotics such as opiates and opioids, morphine sulphate, codeine containing cough syrups and methadone, depressants such as benzodiazepines (clonazepam, diazepam, nitrazepam, chlordiazepoxide, lorazepam and flunitrazepam).

Other abused drugs are stimulants methylphenidate and lidocaine,anti psychotic drugs such as chlorpromazine, chlorpheniramine(Piriton), fluphenazine and trifluoperazine, anticonvulsant drugs gabapentin and pregabalin, narcotic drugs tramadol and dextro-methorphan containing in cough syrups, and new psychoactive substance ketamine.

Particularly vulnerable groups for pharmaceutical drug abuse are young persons (including children adolescents, and young adults), older adults, criminal offenders, persons suffering from psychiatric or other health conditions or disorders, individuals who are currently

dependent on alcohol or illicit drugs or have a history of substance dependence and healthcare professionals.

The real scale of the problem is unknown, due partly to lack of data on the non-medical use of prescription drugs, and partly to the existence of many gaps in the monitoring of their legal use for medical purposes as prescribed by healthcare professionals Mechanism for control of the pharmaceutical drug abuse and the relevant rules and regulations are being established in the Country.

Cannabis containing Ayruvedic pharmaceutical preparations such as Kameshvari Modaka, Madana Modaka and Lagium are also abused.

Sri Lanka is a signatory to three United Nations Conventions and has established a legal frame in consonance with these conventions. They are Single Convention on Narcotic Drugs (1961), Convention on Psychotropic Substances (1971) and United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988).

Legislations pertaining to Drug Abuse including Pharmaceutical Drugs include "Poisons opium and dangerous drugs ordinance of 1935", which has undergone many amendments, most recently in 1986 (Act No 26). Under this Act approximately 70 Narcotic Drugs are controlled.

Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, No. 01 of 2008 (Under this Act 118 Narcotic Drugs, 113 Psychotropic substances and 23 Precursor Chemicals are controlled).

The latest Legislations pertaining to regulation of Pharmaceutical Drugs is the National Medicines Regulatory Act (No. 5 of 2015). This act provides for the establishment of a regulatory Authority to be known as the National Medicines Regulatory Authority, which shall be responsible for the regulation and control of registration, licensing, manufacture, importation, and all other aspects pertaining to medicines, medical devices, borderline products and for the conducting of clinical trials in a manner compatible with the National Medicines Policy.

Regarding control of drug abuse, the problems and obstacles faced are deficiencies in cooperation at national, international, regional and bilateral levels, lack of technical and financial assistance in capacity building and development of monitoring system and gaps in legislations and regulations

Possible solutions and recommendations are strengthening the Information Reporting System already established at the National Dangerous Drugs Control Board (NDDCB) for collecting basic epidemiological data on pharmaceutical drug abuse, on a continuing basis, regarding the extent and patterns of non-medical use of prescription drugs, their consequences and their diversion. Establishment of an electronic reporting system will be a further useful step.

Drug related arrests

In 2015, the total number of drug related arrests were 82,647. 26,458 (32%) offenders were for heroin and 52,319 (63%) for cannabis. 3,870 persons were arrested for Hashish, Babul, Madanamodaka, Opium, Panpara, Tobacco Powder and other drugs.

Drug Related Arrest by Province

Most of the drug related arrests (60%) was reported from the Western province followed by the Southern (10%) and the

Central province (8%). 22,195 persons were arrested as for heroin and 26,198 persons for Cannabis in the Western province.

Drug Related Arrest by District
Colombo district reported 43 % of the total drug related arrests followed by 13.5 % in Gampaha and 4 % in Kandy.

Quantity of drugs seized
The total quantity of heroin seized island-wide was 47kg.6570 kg of cannabis were also seized. Inaddition,3867 kg other drugs such as Cocaine, Babul, Madanamodaka, Panpara, Tobacco Powder and Opium were seized.

Treatment Admissions
The government and non-government organizations were involved in drug treatment services in Sri Lanka. The reported number of persons received treatment for drug use island-wide was 1,395 in 2015. Among them, 866 (62%) was reported from the treatment centres of the National Dangerous Drugs Control Board and 317 (23%) from the Prisoner Drug Rehabilitation Programme of the Department of Prisons. 212 (15%) admissions were reported from the NGO or private treatment facilities.

Treatment Admissions by Drug
Of the treatment admission majority (28.8%) were treated for heroin in 2015. Most of them were multiple drug users and they used cannabis, tobacco and alcohol.
Precursor chemicals
Precursor chemicals are defined as the compounds required in synthetic or extraction processes of drug production, and incorporated into drug molecules. As many legitimate precursor chemicals are also necessary in the processing and synthesis of most illicitly produced drugs such as cocaine and heroin, preventing the diversion of these chemicals from legitimate commerce to illicit drug manufacturing is identified as a major duty of the government.

Precursor chemicals are widely used in the manufacture of a variety of daily necessities such as chemicals, paints, perfumes, cosmetics and medicines apart from their utilization in the manufacturing process of industries in Sri Lanka.

The Government of Sri Lanka has established a Precursor Control Authority under the NDDCB to regulate import, distribution, sale and use of such chemicals. Mechanism for control of the pharmaceutical drug abuse and the relevant rules and regulations are being established in the Country.

THE FUTURE

The United Nations General Assembly Special Session on the World Drug Problem (UNGASS) held from 19th to 21stApril 2016 adopted a new framework putting people at the centre of global policies on drug control, which the head of the UN Office on Drugs and Crime (UNODC) says can help promote the "urgent, united and concerted action we need."

"Putting people first means reaffirming the cornerstone principles of the global drug control system, and the emphasis on the health and welfare of humankind that is the founding purpose of the international drug conventions," the Executive Director of UNODC, Yury Fedotov, told delegates at the opening of the three-day session kicked off with the adoption by the 193-member body of the new framework on countering the world drug problem, drafted in March in Vienna by the Commission on Narcotic Drugs (CND), the UN's top policy-making body on drugs. The document recognizes that to address and counter the world

drug problem, appropriate emphasis should be placed on individuals, families, communities and society as a whole, with a view to promoting and protecting the health, safety and well-being of all humanity.

As the lead entity in the UN system in addressing the challenges posed by illicit drugs, the Executive Director highlighted that the Vienna-based UNODC will remain fully engaged in helping States:

- To ensure access to controlled drugs to relieve pain and suffering
- To promote prevention, treatment, rehabilitation and reintegration approaches rooted in evidence, science, public health and human rights
- To stop the criminals, and prevent and counter illicit cultivation, production and trafficking
- And use all available tools, as provided by the conventions on drugs, corruption, transnational organized crime and terrorism, to tackle related organized crime, money-laundering and illicit financial flows

Taking the podium, Dr. Margaret Chan, the Director-General of the UN World Health Organization (WHO), said an estimated 27 million people have drug use disorders, and more than 400,000 of them die each year.
During the last five years 114 foreigners were arrested in Sri Lanka for offences related to drugs. 46% were Pakistanis and 19% were Indians. 43 Sri Lankans were arrested in foreign countries for possessing drugs during the same period.

In 2015, 26 Foreign Nationals were arrested in Sri Lanka for drug smuggling. There were nine from Pakistan, seven from, India and four from Maldives. One person was arrested from Finland, United Kingdom, China, Czech Republic, Nepal and Ukraine.

There has been an increase in the involvement of Sri Lankan and foreign nationals in smuggling drugs across national frontiers. Sri Lanka is considered a transit point for drug smuggling from India, Pakistan and Afghanistan by the International Narcotic Control Board (INCB).

Detection was made on 3rd February, where a Thai woman was arrested along with 1.7 kg of cocaine, while in a second detection a few days later, a Filipino girl was arrested with 3.3 kg of cocaine.Both had similar travel patterns and had been to Sri Lanka earlier. They were used by the same agent for the operation. A gram of cocaine has a street value of Rs. 15,000.

A Singaporean was among 14 foreigners detained in Sri Lanka in April for smuggling over 110kg of heroin worth US$7.5 million seized from an Iranian fishing trawler. This is believed to be the largest haul of heroin ever seized within the country and the biggest drug bust in nearly three years. Besides the Singaporean, there were 10 Iranians, two Pakistanis and one Indian remanded in custody in connection with the seizure.

On 20th July, a large consignment of cocaine, 274 kilograms, has been discovered recently inside a sugar container at the container yard in Peliyagoda. The detection is one of the biggest hauls in recent times.The police estimate the total value of the seized drugs to be over Rs. 4 billion.

Preliminary investigations have revealed

that cocainewas shipped from Brazil to be re-exported to Europe.

It is alleged that approximately 30 kg of the drug Ecstasy is smuggled to the country every month through the VVIP channel at the airport. This 'tablet' is sold in five star hotel night clubs in Colombo and also along the coastal belt in Hikkaduwa.

The National Dangerous Drugs Control Board (NDDCB), established in 1984, is the pioneer Government Institution which discharges its functions with an aim to eradicate the drug menace from Sri Lanka. Among the other functions, providing treatment to the drug dependents and rehabilitation of drug dependents are main roles of the NDDCB. Four treatment and rehabilitation centers are being conducted under the purview of the Board throughout the country. Counselling service and residential treatment facilities are being provided for the drug addicts at these treatment centers.

Sri Lanka is fortunate to have a rich tradition of networks of non-governmental organizations and religious institutions, and these can be mobilized to discourage the use of intoxicating drugs and alcohol.
To further enhance the efforts of drug abuse prevention, His Excellency the President established a Presidential Task force on Drug Prevention in 2015.

"The overall goal of the Government of the Democratic Socialist Republic of Sri Lanka in relation to the problem of drug abuse is to reduce supply and use to the barest minimum while working towards its total elimination from the society hopefully by the year 2020."

The National Policy for the Prevention and Control of Drug Abuse in Sri Lanka includes "Effective Enforcement of Law against, production, smuggling, trafficking and use of illicit drugs", "Effective monitoring of imports, export, distribution of drugs and precursor chemicals under control", "Preventing the use of drugs reducing the adverse consequences of drug abuse" and "Supporting regional and international initiatives related to drug abuse, prevention and control".

The impact of drug abuse on the individual, his family and on the society is very significant. The family and the community can be the origin of drug problems, but they can also be a potent force for treatment. The disrupted family life can lead to drug problems, while drug problems can lead to disruption of family life.

Drug abuse is common among poor families, while a drug abuser in a family makes them poorer. Drug abuse impairs family life, results in unproductive employment and reduces the quality of life. Impaired performance at work can lead to poor productivity and reduced income. Absence from work and intoxication at work can lead to disciplinary problems, accidents at work and excess medical claims.

It is very unfortunate that young drug addicts face premature death.

The cost to the health services and the economy of the country can be significant. While illicit cultivation, production, distribution and possession of drugs are crimes, drug abusers commit crimes for money and after influence of drugs. Drug trade is involved with money laundering. Drug trafficking leads to all types of crime, violence, gun use and even terrorism.

Monetary costs from theft and other crimes by abusers to support their drug habits, and

money spent for law enforcement agencies and the judiciary can be significant.
Many recommendations are made to prevent and treat drug abuse. Return to old family values in the society is one. There should be adjustment to accept the return of a family member who was a drug abuser. Family counselling for change, informing and educating parents, and support and strengthen religious values is also recommended.

Fight against drugs is not easy. Even in countries where the death penalty is enforced for drug smuggling, drug trafficking continues. Sri Lanka does not enforce death penalty although it is in the law.

President Rodrigo Duterte, the new leader of the Philippines, has a novel method to curb drug demand and supply. "Kill off drug dealers" is his solution. In the weeks following his victory Police went on a rampage and murdered more than 100 people, mostly drug dealers. Thousands surrendered to Police due to fear. Sri Lanka, as a democratic country that values principles of Human Rights, this solution is unacceptable.

I wish to conclude this Oration with a statement by Kofi Annan, a former UN Secretary-General. He said, "Illicit drugs destroy innumerable individual lives and undermine our societies. Confronting the illicit trade in drugs and its effects remains a major challenge for the international community."

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Fitness for Air Travel - Guidelines to General Practitioners

Air Vice Marshal (Dr) Nimal Herat-Gunaratne

Introduction

Commercial air travel is a comfortable, speedy and safe means of transport and is now accepted as a part of everyday life for many people in the developed world. It is affordable and accessible to all sectors of the population and it is easily forgotten that the individual is traveling in an unfamiliar and physiologically unusual environment.

For the fit, healthy and mobile individual there is no problem but for the passenger with certain pre-existing conditions or developing an acute medical problem in flight, the cabin environment may exacerbate the condition.

In-flight medical problems can result from the exacerbation of a pre-existing medical condition or can be an acute event occurring in a previously fit individual. Although the main problems relate to hypoxia and expansion of trapped gases, the stress and physical challenge to passengers of the complex airport environment should not be overlooked (e.g. carrying baggage, walking long distances and dealing with unexpected delays).

Cabin Crew receives training in advanced first aid and basic life support and in the use of the emergency medical equipment, including automated external defibrillators, which are carried on board all Airlines. In the future, airlines intend to install air-to- ground cardiac monitors to assist with diagnosis. In serious cases assistance will be requested from the airline's medical advisers via the air-to-ground link or a medical professional who may be traveling as a passenger.

In a medical emergency, other (non-medical) factors need to be taken into account when considering whether a diversion is appropriate, including:

- Suitable convenient airport
- Appropriate medical facilities
- Terminal facilities for the number of passengers
- Sufficient hotel accommodation for passengers and crew

Most airlines provide services for those passengers requiring extra help but these can be made available only if the airline is advised of the need for special assistance by the passenger or his/her medical practitioner prior to the flight. Most airlines also have a medical adviser to assess the fitness for travel of those with medical needs. The information needed for provision of appropriate assistance depends upon an understanding of the practicalities of air travel as well as an understanding of the basic physics of the flight environment and its effect on human physiology.

The operational effect of the use of equipment such as wheelchairs, ambulances and stretchers must be taken into account and the possibility of aircraft delays or diversion to another airport must be considered. It may be necessary to change aircraft and transit between terminals

during the course of a long journey and landside medical facilities will not be available to a transiting passenger.

Deterioration on holiday or on a business trip of a previously stable condition such as asthma, diabetes or epilepsy or accidental trauma frequently gives rise to a request for medical clearance for the return journey. A stretcher may be required, together with medical support and this can incur considerable cost. Hence the importance of adequate travel insurance that includes the provision of a specialist repatriation company.

Aside from the considerations specific to flying, thought should, of course, also be given to immunization and anti-malarial prophylaxis where appropriate, adverse effects of the destination climate, inadequate health resources and the potential impact of lost or stolen medication.

Pre-flight Assessment and Medical Clearance

The ideal traveler is one who is fully vaccinated, insured, taking appropriate protection measures, aware of potential risks, prepared for the demands of the journey (both on the ground and in the air) and fully conversant with their destination. (For example, Mexico City with its high pollution levels and an altitude above 9,500 feet should not be contemplated by those with respiratory impairment.)

Objective

The objectives of medical clearance are to provide safe, healthy travel, high levels of customer satisfaction and to prevent delays and diversions to the flight as a result of deterioration in the passenger's well-being. It depends, however upon self-declaration by the passenger and upon the attending physician having an awareness of the flight environment and how this might affect the patient's condition.

Mechanism

Early notification to the airline is essential to ensure communication to operational areas for pre-board and baggage assistance, provision of buggies or wheelchairs for distances, special diets and seating.

Medical clearance is required when:

1 Fitness to travel is in doubt as a result of recent illness, hospitalization, injury, surgery or instability of an acute or chronic medical condition

2 special services are required e.g. oxygen, stretcher or authority to carry or use accompanying medical equipment.

3 passengers are contemplating overseas diagnostic or hospital treatment in specialist hospitals. There is still the need to conform to airline requirements for medical clearance.

Assessment

Physiological Considerations

Basic principles of physics, physiology and pathology should be used in determining the passenger's fitness to fly. Modern commercial airliners fly with a cabin altitude of between 6000 and 8000 feet when at cruising altitude, which means a reduction in ambient pressure of the order of 20% compared with sea level and a consequent reduction in blood oxygen saturation of about 10%. Consideration must be given therefore to the effects of the relative hypoxia encountered. Any trapped gas will expand in volume by up to 30% at the normal aircraft cabin cruise altitude, potentially leading, for example to pain and perforation of the ear drum if the

Eustachian tubes are blocked by infection or to stretching of suture lines following recent abdominal surgery.

The cabin air is relatively dry which can lead to a sensation of dryness in the mouth and extremities, though studies have shown that it does not lead to central dehydration and plasma osmolality is unchanged.

The potential for the development of traveler's thrombosis, particularly on long haul routes, should be borne in mind. Many airlines promote lower limb exercise in the in-flight magazine and encourage mobility within the cabin. However, those passengers known to be vulnerable to DVT (for example with clotting disorders, recent surgery or trauma and those with certain types of malignancy) should undergo appropriate medical evaluation, and consideration given to the use of compression stockings, aspirin or anti-coagulants.

In addition to the effect of the condition upon the sick passenger, account must be taken of the effect or potential effect on other passengers or crew members. It is important to recognize that the filters for re-circulating cabin air remove bacteria and most viruses, so that any risk of transmission of infection in the cabin is remote and usually confined to those passengers seated near to the infected passenger. However, it is an International Health Regulation that an individual should not fly during the infectious stage of a contagious disease.

Practical Considerations

The best time to establish the fitness of the prospective passenger for a commercial airline flight is in the weeks prior to the intended departure.

The pre-flight evaluation should focus on the passenger's medical condition with special consideration given to possible infectivity, the dosage and timing of any medication and the need for special assistance requests.

The physician can achieve much by simply reminding passengers to hand carry life line medication and by endorsing the need for valid travel insurance which includes adequate health cover.

Criteria

Examples of conditions requiring particular evaluation include cardiovascular disease, deep vein thrombosis, and upper and lower respiratory tract disease (e.g. sinusitis, asthma, chronic obstructive airways disease, emphysema), recent surgery, cerebro-vascular disease, unstable psychiatric illness, diabetes and infectious diseases. Assessment is often relatively simple. For example, a knowledge of the passenger's exercise tolerance can be a useful indication of fitness to fly. If someone is unable to walk a distance greater than 50 meters without developing dyspnoea, there is a risk that they will be unable to tolerate the relative hypoxia of the pressurized cabin. More specific information can be gained, if necessary, from knowledge of the passenger's blood gas levels and oxygen saturation.

Operational airline crew are familiar with the risk of otic barotrauma from flying with an upper respiratory tract infection, hay fever or sinusitis but passengers may need to be reminded of this potential hazard. It is also considered unwise to travel by air with otitis media unless appropriate antibiotics have been administered for at least 36 hours and the patency of the Eustachian tubes assessed by a health professional.

It is advisable to carry written confirmation of non-infectivity, for example when jaundiced. Similar documentation is wise if carrying medication to satisfy customs at ports of entry.

One other important point is to avoid prescribing a medication for in-flight use unless the would-be traveller has used it before, is familiar with its primary effects and has no undue side effects.

Waivers and disclaimers are inappropriate and are not recommended practice.

Medical Criteria for Fitness to Fly

There are a number of contraindications to flying that are absolute, many more of which are relative. The following guidelines are in use in Airlines, which are, in turn, based on those issued by IATA (the International Air Transport Association). It is impossible to give definitive advice for every condition and the information provided is for guidance only and may be varied for reasons such as complications or multiple pathology.

Medical escorts may be required if there is a high level of dependency or if there is a significant risk of deterioration. In all cases, passengers must be reminded to carry into the cabin with them any medication that might be required in flight.

Some Medical Conditions Requiring Pre-Flight Medical Evaluation:

Cardio-Vascular Disease

Examples include recent myocardial infarction, coronary artery bypass grafting, angina pectoris and congestive cardiac failure.

Most cardiac patients on medication can tolerate cabin air if stable, with the use of supplementary oxygen in some cases.

Following an uncomplicated myocardial infarction, passengers should not fly for at least 7 days. Angina, if stable with infrequent attacks, is not usually a problem. Coronary artery bypass grafting and other chest surgery should pose no risk providing the passenger has made a normal uncomplicated recovery. Air travel can be contemplated, if necessary, at 10 days post surgery, thus allowing time for the air introduced into the chest to be reabsorbed. The situation following the relatively new procedure of angioplasty (with or without stent) is less clear because of the risk of early re-occlusion. In most cases travel can be contemplated within 3 to 5 days but individual assessment is required.

Respiratory Disease

Passengers with asthma and chronic lung disease (including chronic obstructive pulmonary disease (COPD) and pulmonary fibrosis) are usually able to travel safely if the condition is stable and there has been no recent deterioration.

One method for use by the physician when making an assessment is to check whether the passenger can walk 50 meters on the flat or up one flight of stairs without becoming severely dyspnoeic. If the answer is "yes" then the passenger is likely to be fit to fly; if "no" most of the passengers may be transported safely and without incident providing that supplemental oxygen is available during the flight as standby or for continuous use. Individuals who are markedly breathless at rest should be advised not to fly.

For borderline cases or when oxygen is required on the ground (and the trip is essential), measurements of oxygen saturation and/or blood gas analysis can be useful. Although the percentage of oxygen remains constant at around 21% whatever the altitude, the partial pressure of oxygen in the cabin at the highest cruising altitude can be considered to be equivalent to an oxygen concentration of approximately 17% at sea level. Some respiratory physicians therefore, have assessed oxygen saturation

levels on patients whilst breathing 16- 17% oxygen as a definitive test of fitness to fly. More information on the provision of in-flight oxygen can be found below.

There is no specific risk to passengers with asthma in the aircraft cabin; the most significant problem encountered is when medication is inadvertently packed in the hold. For travelers to areas of the world where health care provision may not be readily available, it may be prudent for all but the mildest asthmatics to be advised to take a course of steroids with them for use in an emergency.
Pneumonia should be resolved, with no residual infection and satisfactory exercise tolerance as above. If the passenger also has existing pathology (such as COPD) it is often prudent to delay travel for a few weeks if possible.

Under conditions of reduced pressure, gas trapped in the body cavities will expand and this must be considered following a pneumothorax. Generally, it should be safe to travel by air two weeks after successful drainage.

Blood Disorders
For passengers with anaemia special consideration should be given to anyone with a haemoglobin below 7.5gm/dl as it reduces the tolerance to hypoxia. If there is any doubt oxygen should be considered.
Those with chronic renal failure and other conditions predisposing to anaemia, usually tolerate a lower haemoglobin level at cabin cruising altitude than someone with a recent haemorrhage.
Those with sickle cell anaemia should travel with supplemental oxygen and should defer travel for 10 days following a sickling crisis. Sickle cell trait has not been associated with problems at normal cruising altitude.
Central Nervous System Disorders

Following a stroke or cerebro vascular accident, passengers can usually travel after 3 days if stable or recovering, though formal medical clearance should be sought if travel is required within 10 days. For those with cerebral artery insufficiency, hypoxia may lead to problems and supplementary oxygen may be advisable.

Travel should be delayed for 24 hours after a grand mal seizure. The passenger with stable epilepsy may be more prone to seizures during a long flight; mild hypoxia and hyper- ventilation are known precipitating factors, in addition to the aggravation of fatigue, anxiety and irregular medication. Whilst it would not be appropriate to change medication immediately prior to a trip, consideration should be given to providing extra anti-convulsant medication. If nothing else, the passenger with epilepsy must ensure that they have sufficient medication in their hand baggage for the duration of the flight and also for any unexpected delays.

Deep Vein Thrombosis (DVT)
Those with a DVT of the leg can travel once the condition is stabilized on an appropriate anti- coagulation regime with resolution of the clot. Prolonged immobility is a known risk factor for thrombo-embolic disease and all passengers should keep mobile whilst in flight. It is recommended that they stand in their seat area and stretch their arms and legs every couple of hours, walk around the cabin whenever they can and follow an in seat exercise programme Passengers with intrinsic risk factors, such as a history of DVT or pulmonary embolism, post thrombotic syndrome, chronic venous insufficiency, malignancy, coagulopathy, heart disease or pregnancy, should, in addition, seek medical advice and take appropriate precautions. Prophylaxis with low molecular weight heparin or aspirin may be appropriate.

ENT Disorders
Otitis media, sinusitis and any other condition leading to blockage of the Eustachian tube may lead to problems because of gas expansion. Pain, perforation of the tympanic membrane and sinus barotraumas can result and flying should be delayed until the condition has resolved. Passengers can fly 10-14 days after tonsillectomy or middle ear surgery. If the jaw has been wired for any reason, a passenger may only travel if there is an escort equipped with wire cutters or a self-quick release mechanism is fitted.

Fractured Limbs
Following application of plaster cast. airlines restricts flying for 24 hours for flights under 2 hours and 48 hours for longer flights. However, these restrictions do not apply if the cast has been bi-valved which helps to avoid harmful swelling, particularly on long flights. Full length, above the knee plasters or those who require leg elevation are required to purchase appropriate seating (First, Club World or extra seats in World Traveler) in order to obtain the necessary leg room. Fractures of the hip or femur will almost certainly require a stretcher. Safety regulations preclude the use of Emergency Exit rows for any passenger with a medical condition.

Gastro-Intestinal Disease
Passengers who have had abdominal surgery in which hollow viscus has been sutured are at risk of perforation or haemorrhage as a result of gas expansion at altitude. Air travel should be discouraged for 10 days following any abdominal surgical procedure. In addition stretching gastric or intestinal mucosa may result in haemorrhage from ulcer sites although travel may be permitted if there is clear endoscopic evidence of healing.

Travellers with colostomies are not at increased risk during air travel although intestinal distension may increase faecal output. The use of a large colostomy bag is recommended. More frequent changes may be necessary for smaller bags and extra supplies should be carried in the cabin hand baggage.

Passengers may experience abdominal discomfort because of gas expansion in flight but this is not of significant medical concern.

Infectious Diseases
In common with other public transport systems, an airline cannot accept passengers with infectious conditions until the risk to other passengers has passed.

Diabetes Mellitus
As long as they can administer their own medication passengers with diabetes mellitus can usually travel without difficulty and medical clearance is not required. It is important that they are aware of problems caused by time zone changes. It is recommended to remain on one time system during the flight and only attempt to readjust to local time on arrival at their destination. For flights over 8 hours a specialist doctor or nurse should advise regarding an insulin regime. Diabetics also need to be reminded that insulin does not generally require refrigeration. The airlines recommend carriage of insulin in the hand baggage and not in the aircraft hold where it is possible that the insulin may be frozen and so become inactivated. Needles should be disposed of safely and never in seat pockets or toilets.

Special diets can be requested at the time of making a reservation. It is often sensible to specify what the dietary requirements are rather than just asking for a "diabetic meal".

Ophthalmological Procedures

Procedures for retinal detachment can involve the intra-ocular injection of gas in order to temporarily increase intra-ocular pressure. This gas bubble needs to be fully absorbed prior to any flight. This takes approximately 2 weeks if sulpha hexafluoride is used and 6 weeks with the use of perfluoropropane.

For other intra-ocular procedures and penetrating eye injuries, one week should elapse before flying. There is no specific restriction on flying after cataract surgery and corneal laser surgery.

Pregnancy

Whilst pregnancy is not a "medical condition", flying whilst pregnant is a frequently raised topic. Normally pregnancy is a happy event for all concerned but delivery in flight it is not without risks to the mother and baby. For this reason many airlines, refuses to carry women in the latter stages of pregnancy, typically after 36 weeks for single pregnancies, 32 weeks for multiple.

A certificate is normally required to be carried after 28 weeks confirming the estimated date of delivery, that there are no complications and, in the view of the doctor or midwife, the passenger is fit to fly.

Passengers should be reminded that health travel insurance in the latter stages of pregnancy can be difficult to obtain.

Psychiatric Disorders

Because of the safety implications, psychiatric disorders need to be stable and controlled. Generally any acute severe condition (such as an acute psychosis) would need to have an appropriately trained medical escort (RMN) plus suitable sedation which can be administered by the escort. Medical clearance must be sought well in advance of intended travel.

For passengers with other disorders, such as anxiety or depressive neurosis, the airport environment and the flight itself may have a significant impact. Small doses of anxiolytics may be helpful in passengers who are familiar with their effects and side effects. However, great care must be taken to avoid over sedation (which could be misinterpreted by cabin crew as serious illness) and mixing with alcohol which can lead to unpredictable behavior.

A variety of courses are available to help those with a fear of flying and passengers will usually find cabin and flight crew extremely supportive if they are aware of the problem.

Terminal Illness

Not infrequently airlines are asked to carry passengers with terminal illness with only a matter of days or weeks to live, usually in circumstances where the passenger has expressed a desire to die in their native country. Whilst recognizing the need to deal sympathetically with such requests, the airline medical department will need to evaluate very carefully the risk of in- flight death or unexpected deterioration. While a proportion of such passengers can be accommodated with special arrangements such as a stretcher with a qualified escort, the treating physician needs to be mindful of how distressing it can be to relatives (and indeed airline cabin crew) should the passenger die in flight and the subsequent burden of regulatory requirements at the destination.

Summary of Contra-Indications

It should be noted that a passenger with a medical condition will be assessed as an individual and any complications or additional medical problems may extend the period for which they are unable to fly.

- Anaemia - with haemoglobin less than 7.5g/dL

- Cardiac Failure - uncontrolled
- Cerebral Infarction - within the last 3 days
- Contagious or Communicable diseases
- DVT - acute
- Fractures - unstable/untreated
- Haemorrhage - recent gastro-intestinal
- Jaw - fractured with fixed wiring
- Myocardial Infarction - within last 7 days
- Operations - depending on the nature of the surgery, within 5 to 10 days.
- Otitis Media - with loss of Eustachian tube function
- Pneumothorax - suspected or confirmed
- Pregnancy beyond the 36th week of gestation
- Psychiatric Disorders and those whose behavior is unpredictable, aggressive or may disrupt the flight or endanger other passengers
- Respiratory Disease - with marked breathlessness at rest
- Sickling crisis - recent
- Sinusitis - severe
- Any Conditions which may be exacerbated by the flight environment
- Unstable Conditions with a risk of deterioration prejudicial to the passenger or the flight

Oxygen

In addition to the main ventilation system, all commercial aircraft carry an emergency oxygen supply for use in the event of failure of the pressurization system or during emergencies such as fire or smoke in the cabin. The passenger supply is delivered via drop down masks from chemical generators or emergency reservoir and the crew supply is from oxygen bottles strategically located within the cabin.

Sufficient first aid oxygen bottles are carried to allow the delivery of oxygen to a passenger in case of a medical emergency in flight.

Specific arrangements for a premeditated supply of oxygen for a passenger needs pre- notification to the airline at the time of booking the ticket. Flow rates of 2 litres or 4 litres per minute are available on many flights, but on some, generally long haul routes, only 4 litres per minute is available so it is wise to check with the airline concerned when booking oxygen. A standard oxygen mask is normally provided. Other types would usually need to be supplied by the passenger (e.g. nasal cannulae, infant/child masks, tracheal etc.).

The supplementary oxygen provided for use by the sick passenger may be delivered from gas bottles or it may be delivered by tapping into the aircraft ring-main system. Some carriers provide molecular sieve concentrators although these can be expensive to service and maintain. Most airlines, make a charge to cover the cost of its provision for which there is not a refund should the pre-arranged oxygen not be used. It should be noted that the charge contributes to the cost of provision (whatever the mechanism of supply) and airline does not make a profit from the service.

Passengers and their physicians should be aware of those airlines which do provide oxygen usually do so for in flight use only and any ground requirements, including transit, would need to be made by the passenger or their representative.

It is not generally permissible for the passenger to use, or carry, his/her own oxygen system in flight. All equipment used on board must meet the regulatory standards including the specification for aviation oxygen, which is higher than that for medical oxygen in terms of permissible water content to prevent freezing and the type of valve which needs to be able to cope with varying cabin pressures.

Stretchers

All equipment used on board a commercial aircraft must comply with the safety and compatibility requirements of both the regulatory authority and the airline. This applies to a stretcher, which must be securely fixed in the cabin, must not impede normal or emergency egress and must provide adequate restraint for the sick passenger.

There is an assessment and approval system for all aircraft equipment and the airline itself will normally arrange for the stretcher provision.

A suitable attendant, whether nurse, doctor or family member, must be responsible for all care and attention to the passenger throughout the journey, including toileting and disposal of catheter bags. Consideration must be given to factors such as disposal of biohazardous waste and the effect on other passengers and crew members of carrying the sick passenger. Any supporting equipment must be approved by the airline and any equipment which requires electrical power must be operated by dry cell batteries. This equipment, generally, cannot be used during the crucial phases of take off and landing. Pre and post flight ground handling of the stretcher must be arranged in advance of the flight.

There are specialist medical assistance and repatriation companies established throughout the world and these work closely with the major airline medical departments and with air ambulance companies. These companies also have links with the travel insurance industry and there is much inter-dependency.

Stretcher cases have potential practical and organisational difficulties inherent in the operation so arrangements by specialist companies are usually preferred. Specialist air ambulance facilities are, in some cases, more appropriate.

Other precautions

The relatively dry cabin air can lead to the sensation of dryness in the mouth, though evidence suggest that it does not lead to actual dehydration. Passengers should therefore be encouraged to maintain their normal intake of food and fluid, but alcohol consumption should be no more (and preferably less) than the passenger's normal intake.

Established treatment regimens should not be altered. Ensure valid Travel and Health Insurance is purchased, that the passenger has had relevant vaccinations and has a supply of appropriate anti-malarial medication.

Considerations of Physical Disability or Immobility

As well as the reduction in ambient pressure and the relative hypoxia, it is important to

consider the physical constraints of the passenger cabin.

Passengers with a disability (of sight, hearing or mobility etc.) do not require medical clearance although special needs, such as wheelchair assistance or assignment of seats with lifting arm rests, must be identified to the airline at the time of reservation.

There is limited leg space in an economy class seat and thus a passenger with an above-knee leg plaster or an ankylosed knee or hip may simply not fit in. The impact of a long period of immobility in an uncomfortable position must be remembered and even in the premier class cabins with more available leg room there are limits on space.

The challenge of the complex airport environment should not be under-estimated and must be considered during the assessment of fitness to fly. The formalities of check-in and departure procedures are demanding and can be compounded by illness and disability as well as by language difficulties or jet lag.

There may be a long distance between the check-in desk and the boarding gate. Not all flights depart or arrive from/to jetties and it may be necessary to climb up or down stairs and board transfer coaches. It is thus important to specify the level of assistance required when booking facilities such as wheelchairs.

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Extracts of Submissions to The Lesson Learnt and Reconciliation Commission

Dr. Ponnuthurai Sivapalan

Chairman and the distinguished Commissioners,

I am Dr. Ponnuthurai Sivapalan a Sri Lankan, a Hindu and a Tamil. I am a Western medical practitioner from Peradeniya Medical School, I left government service and started my medical centre at Atchuvely in 1977. I came to Colombo in 1996 and opened a medical centre at Wellawatte. I came forward to give evidence because I love my mother land and I do not want a recurrence of the evils that had happened for the last 60 years. As a doctor and a citizen it is my foremost duty to work towards preventing sufferings and death of the people due to physical illness or political misgivings. Most of my batch mates, Tamils as well as Sinhalese, had left the country at the beginning of their careers s. I did not leave because I wanted to serve our people in my mother land.

As a family physician I got good opportunities to meet different categories of people. I could gather good knowledge of the situation in the country. I lived in Jaffna when it was fully under the control of the Liberation Tigers of Tamil Eelam (LTTE). That also gave me a good experience of their atrocities on the people. I had seen the suffering of the people, mentally and physically, caused by the violence of the previous governments. My medical center was in Atchuvely close to Palaly army camp. People had many sleepless nights because artillery shells were fired in the nights. So people went to next villages for the nights. I used to feel sorry for the people whenever they ask for medicines to suppress their cough or frequency of urine saying that they did not want to disturb the people who gave them shelter. I had to do my medical service amidst shells and bombs risking my life and that of my family. I had treated many people injured by shrapnel. One night two children, a brother and a sister, were brought to me with their pelvic region blasted. I couldn't do anything. They died in Jaffna teaching hospital later. The most pathetic situation was the case of pregnant mothers who came to my maternity home when labor pains started, and left the ward soon after delivery, by bicycle, because of the shells and bombs in my area. One woman delivered triplets at a time an artillery shell was fired into a nearby land. In my medical career r, in addition to the normal civilians, I had given treatment to Janatha Vimukthi Peramuna (JVP) boys, armed organizations of the Tamil boys, Sri Lankan security forces and the Indian Peace Keeping Forces (IPKF). I do not know how many doctors would have had the chance to give treatment to such different categories of people.

Facts and circumstances that led to failure of the ceasefire agreement.

The ceasefire agreement was signed by the legally elected Prime Minister and the leader of an illegal armed group, banned in many democratic countries, facilitated by a country with vested interests. That country is biased towards that armed group. I was surprised that an Executive President with wide powers had allowed those two to sign

that agreement even though the Prime Minister was from a different political party and the leader of the LTTE was sentenced to 200 years imprisonment by the Sri Lankan courts. I regret that none of the intellectuals, academics, professionals or the legal luminaries had advised or protested against the agreement that gave a breathing space for the LTTE to prepare for the next onslaught. It happened later.

Failure of the ceasefire was by the grace of God to prevent excess of devastation in our country. It had saved thousands of Tamil children who would have been forcibly conscripted and sacrificed.

The leader of the LTTE was very firmly committed to Tamil Eelam He would not have stopped the war for anything short of Tamil Eelam. Even after the LTTE delegates had accepted Oslo resolution, he rejected it and said that they could shoot him if he gave up Tamil Eelam. Hence we should have anticipated the failure.

Whenever a breathing space was needed only a ceasefire was called for. Earlier also there were few peace talks and ceasefire followed by vigorous fight. When LTTE had talks with President Chandrika, a media man asked Anton Balasingam whether they would lay down the arms if she accepted their demands. He replied that they would not do, but they would put forward new demands because their profession was war. So the failure of the ceasefire could have been anticipated.

Vanni district and the people were allowed to be controlled by the LTTE and they were allowed to collect taxes from the people using A9 road. Security forces or any other political parties were not allowed into Vanni but LTTE could go anywhere according to that asymmetrical agreement. Jaffna was liberated from the LTTE with lot of sacrifices. The agreement paved way for them to go anywhere. They started their activities and conducted Pongu Tamil demonstration indicating the impending war.

The Sri Lanka Monitoring Mission (SLMM) was obviously biased towards LTTE and it turned a blind eye to their violations. It was said that National and International Non Governmental Organizations (NGOs) were supporting the LTTE. The agreement itself was not sound enough because it could be cancelled with just two weeks notice.

The events that followed

With the closure of the Mavil Aru sluice gates by the LTTE, the war started as a humanitarian war openly. There were aerial bombings and artillery shelling and ground attacks by the government armed forces but with almost minimal civilian deaths unlike the previous Eelam wars according to Vanni people whom I had met. They told me that the bombers bombed precisely at the camps of the LTTE until the final stages. LTTE started conscripting children without any mercy from each family. Parents had to hide their children in bunkers and in the jungles and sometimes the parents were punished severely, there was a reign of terror. In the final stages there were more civilian deaths. With the advancement of the army, the area under the control of the LTTE had shrunken. A part of the area was allocated as, safe, no fire zone and the civilians were asked to stay in that area. But LTTE went into that area and fired artillery shells and in a short time there was a return of artillery shells into that area and many civilians died there. People tried to escape out of Vanni when the army moved in. Most of the people caught fleeing were killed by LTTE. Sri Lankan army rescued many civilians at that time.

At the final stages and at the end of the war approximately 300,000 people were displaced from Vanni to Vavuniya. Government opened up camps, and accommodated them and gave food and other facilities that were possible in a short period for an unexpected large number and secured them putting up fences with barbed wires for their safety. I had spoken to many relatives of the inmates they told me that the people had nothing to grudge, they understood the difficulties of the authorities, they were happy that they were liberated from the LTTE. But the opponents of the government and others with vested interests unfairly blamed and criticized the government as usual. In fact one person from Vanni said that "compared to the boys the security personnel were like god". As a person who had got displaced earlier in Jaffna, I know the anxiety and the agony of it. If the government had not done it most of those people would have been on the roads.

Lessons learned

The Ahimsa struggle of Mahatma Ganthi in India mainly and the freedom struggle in our country gave us the Independence. Colonial masters left our shores with treasures and not with pleasure. They left behind their divide and rule policy with their followers, Samuel James(SJ), Don Stephen(DS) and Solomon West Ridgeway Dias (SWRD) who were power hungry. As a result our motherland lost many lives, millions of rupees, peace and the good name. Even now those masters are trying to destabilize our country.

The causes for the war are:

1. On the 19th of Dec. 1949, SJV formed Federal Party and named it, Ilankai Thamil Arasu Katchchi(ITAK) to fight for Tamils when there wasn't many grievances. That gave suspicions to Sinhalese.
2. Reaction of DS to ITAK was to colonize the North and East with Sinhalese from the South thought there were enough lands in the south.
3. In 1956 Sinhala only Act was passed by SWRD government. Federal party performed satyagraha opposite the parliament in the Galle Face. Thugs assaulted them. That was the beginning of the violence in Sri Lanka ending in Nanthikadal
4. Defacing of sinhala "Sri" Letter on the number plates of the buses by ITAK was followed by defacing of tamil letters in the name boards with tar in the South. The Prime Minister SWRD said SJV Chelva was very friendly with him and used to get much help from him. Since SJV asked for those new buses he gave them. He was surprised to hear that SJV was defacing the Sri letters. He would have given other buses if he had asked them.
5. 1958, 1977 and 1983 communal riots resulted in the movements of the Tamils to the North and East to save their lives. It must be said that many Sinhalese gave protection to Tamils though the government at that time failed to do its duty at the proper time. After riots the Tamil armed groups forced the Sinhalese to leave the North.
6. Burning of the Jaffna Public library by thugs from the South and the indiscriminate shooting and burning of houses including that of the Jaffna MP, late Yogeswaran by the security forces.
7. The death of nine persons due to electrocution on the final day of the Tamil research conference in Jaffna in 1974. On that day the police went to

arrest an Indian citizen, Janarthanan who entered Sri Lanka illegally since his visa had been refused because of his political connections. Boys threw stones at the police. The police fired in the air. Electrical wires snapped and those nine persons got electrocuted accidently. Tamil politicians portrayed it as a sacrifice made by those nine persons for the Tamil cause and erected monuments for them. The action of the police was alleged as an anti-tamil action by the Sri Lankan police by the politicians.

8. Thamil Eelam Resolution of the TULF in 1976 was the main cause of the war. When the popularity of the Federal Party was going down, it invited the Tamil Congress Party to form the TULF and then they put forward the Thamil Eelam demand to attract the Tamils and cause anxiety among Sinhalese. On that day itself after passing that resolution the leader of the TULF, SJV had admitted to few people that it was not feasible. I had heard of TULF parliamentarians telling few people that Thamil Eelam was just a slogan to win the elections.

9. Prevention of Terrorism Act (PTA) and the indiscriminate arrests, torture and killing of Tamil youths made the Tamil youth to fear that their life in Sri Lanka was at stake. Many boys took up the arms to save their lives and that of the Tamils. They took up arms to fight the security forces involved in indiscriminate killings. The girls were instigated by those who promoted violence, saying that they would be raped by the security forces if they were not armed. The activities and the speeches of Thamil Arasu Kadchi politicians demonizing Sinhala leaders and Sinhalese encouraged the boys. Only few Tamils knew that the TULF also gave its consent to the government to pass the PTA act in the Parliament though they were not in the Parliament on that day. It was a treacherous act of the TULF against the boys whom they had brainwashed and encouraged to take up arms.

10. India's worries about its security because of the foreign policy of the JR government: President JR was learning towards Western countries and was friendly with Pakistan. This helped armed Tamil youth and later made JR to sign Indo-Ceylon accord.

How to ensure that there will be no recurrence

We must have trust in God and do the right thing. God is there to save and help in difficulties. Sinhala only national anthem might cause the recurrence of events that happened following Sinhala only official language. President should nip it at the bud. I'm surprised to find that people who talk of Sinhala only national anthem had not learnt the bitter lesson even now. A Sri Lankan must sing the National Anthem in his mother tongue to be a patriot. Sri Lankans who say that this is a Sinhala Buddhist country are ignorant of the history of Buddhism and Sinhalese.

President Chandrika formed the government in 1994 and admitted that injustice had been done to Tamils by the previous governments including the governments of her parents. She worked hard to bring unity among the communities and transformed the security forces to respect human rights. Under her leadership war started in May 1995. In 5 months Tigers had to flee from Jaffna but the UNP government could not do that even after fighting for more than 5 years.

President Mahinda had gone still further. He had liberated the Tamils and the country from terrorism in 2 years. We could learn that his patriotism, sincerity, boldness, diplomacy and love for humanity brought success in the Humanitarian Operation.

National Unity and Reconciliation

The national unity and reconciliation could be effectively promoted by recognizing Sri Lanka as one country. All are Sri Lankans having equal rights. Sinhala and Tamil are the languages of Sri Lankans both are the official languages. It should be included in the constitution in such a way it could not be changed in future. This is the best solution.

Tamil political parties and its leaders want power. They want to keep Tamils and an area under their control. They want a larger area. That is why they want North and the East to be amalgamated. Leaders of the North would suppress those of the East as happened to Rajadurai of the Federal party those days. But we want a PEACEFUL LIFE which we had lost for the last 60 years. President of the Democratic Socialist Republic of Sri Lanka is the President of all regions in the country and all Sri Lankans. He is responsible for the safety and the well being of all the Sri Lankans like. He liberated the people from LTTE. It is his duty to liberate the most gullible people from the proxies of the LTTE and from those who could create an environment for reappearance of an organization like LTTE and destroy the next generation also.

People who talk communalism and / or tarnish the image of the country should be punished. All are equal before Law.

As professionals we are not involved in nation building. Examination and profession oriented education in our country had made most of our intellectuals and academics close their eyes, ears and mouth to the affairs of our country. They think that politics is a dirty game. But politicians are the law makers of the country. If not properly done it affects every one.

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Turn Back to Win The Future: Rethinking How We ShouldLive to Fight The Current Health Challenges

Dr, Anuruddha Padeniya

The fastrising trend of Non-communicable Diseases has put our health in a challenging state. Even though the numbers of interventions implemented are countless, the outcome has not being very satisfying. With this article, I have tried to identify the traditional Sri Lankan practices as very simple, cost effective and time tested interventions for the battle against the current health challenges.

Current Health Challenges

We are on the verge of an emerging epidemic of the Non-communicable Diseases causing more deaths than all the other causes combined (Division of Global Health Protection, CDC), with a grimmer picture in the low and middle income countries like ours. Diabetes, cardio-vascular disease, high blood pressure, cancers, obesity, fatty liver and Chronic Kidney Disease of unknown origin (CKDu) rise among all the other NCDs in Sri Lanka posing a threat not only to elderly but also to the younger generation. The report published in 2004 by the International Obesity Task Force (IOTF) revealed that at least 10% of school-aged children between five and 17 years are overweight or obese. These children are at increased risk of developing metabolic syndrome, diabetes and cardiovascular disease later in their lives. (Metabolic Syndrome in Children and Adolescents, International Diabetes Federation)

"This is the first generation where children may die before their parents".(Paul Zimmet) One of the most elaborate studies done on diabetes in Sri Lanka by Dr. Katulanda has found that one in five adults in Sri Lanka has either diabetes or pre-diabetes and one third of them are undiagnosed. While the diabetes has marked its territory obesity has also come into the picture. The studies reveal that there is a relatively high prevalence of overweight and obesity, particularly, abdominal obesity among adults in Sri Lanka and female sex, urban living, higher education, higher income and being in the middle age were shown to be associated (Katulanda et al, 2010). Nearly one-third of the Sri Lankan adult population is hypertensive. Male gender, increasing age, Sri Lankan Moor ethnicity, physical inactivity, presence of diabetes and central obesity found to be the most striking factors associated with increased blood pressure (Katulanda et al, 2014). Emerging Chronic Kidney Disease of unknown origin (CKDu) accounts for considerable morbidity and mortality in Sri Lanka, especially in North Central Province. The disease mainly affects males from poor socio-economic backgrounds who are involved in paddy farming (K. Wanigasuriya, 2012).

The causative agents are more or less common factors making it easy to implement large shared strategies in preventing NCDs. These strategies only can be sustained if there is an attitude change in the citizens valuing our own customs and culture.

What Can We Do?

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO). The way we eat and drink, access to education and technology, housing, the environment we live and work, all plays a crucial share

in our health. The living condition we had in the past had made us healthier and more successful. With the current trend of rapid urbanization and industrialization, it has led many Sri Lankans towards a deskbound lifestyle, hugging a Western living pattern, promoting the emergence of the NCD epidemic. So it is time to rethink how we should live, disposing the West and embracing former Sri Lankan culture and lifestyle.

We are a nation with a proud history accounting for a number of innovations even astonishing the present-day technologically advanced world. Our development was based on the concept of "Wewai, Dagebai, Gamai, Pansalai" where people were mentally, spiritually and socially healthy. This was a cost-effective fulfilling model which made our ancestors hale and hearty. Bringing back this model will be a defining moment in the battle against NCDs in which currently we are far behind.

Drinking Water

With current fast food culture, consumption of water is largely substituted by many brands of carbonated sugary drinks accounting as one of the fundamental reasons for childhood obesity and diabetes. In good old days substitutes for water were all natural fruit drinks or most importantly coconut water which contains many of the essential minerals for the human body.

Water is a basic nutrient of the human body which supports digestion and absorption of food, transportation of nutrients and elimination of waste and toxins. The daily requirement of the amount of water will depend on many factors including the age, gender, physical activity and food habits. Drinking water throughout the day supports proper functioning of your body and if you have drunk enough water you should not feel thirsty and should pass colourless urine.

Losing our touch with our culture and embracing the so called Western culture has led us to a shocking point that we have to even promote drinking water among ourselves.

Healthy eating

Sri Lankans has started cultivating rice since as early as 800 BC and until today rice continues to be the staple of the traditional Sri Lankan cuisine. But it is the time to dispose the misconception of rice being the healthiest for all three main meals. Our diet was a colourfull ideal healthy meal with balanced nutrients and energy. The food was fresh grown with no pesticides and traditional rice contained less carbohydrate and more vitamins and minerals. With industrialization, hybrid rice came into the market and for a better harvest people started flooding the crops with pesticide. Urbanization has introduced the fast food culture loading peoples with sugar, salt and oil. All these factors have contributed to the rising trend in the NCDs locally as well as globally.

Healthy Targets:

- 1 table spoon of salt per person per day
  A 400 g pack of salt should be sufficient for a family of 4 for 20 days
- Not more than 6 teaspoons of sugar per non-diabetic person per day
- Consume 5 servings of Fruit & Vegetables per day (the recommended amount is 400 gms of Fruit and Vegetables per person per day)
- Avoid food with Trans fats
  Traditional Sri Lankan diet was the ideal diet with all the above targets achieved and it is the time to embrace our diet instead of using invented "healthy" diet.

Physical Activity

"Do brisk walking, aerobic exercises,

cycling, swimming for at least 30 minutes per day for 5 days a week" has become a more familiar fact to the public with the intense public awareness happening in prevention of NCDs. But we have disregarded the fact that we were used to be an active nation before the technology barged in. Walking, doing ordinary household work, washing clothes, all these have contributed to balance the energy expenditure with the energy intake. Thus the more sustainable option would be not to force exercise to people, but to make the healthier choice as an option to the public. For example Denmark government has won the battle with an innovative city planning promoting cycling among citizens. At the moment the cycling culture of Denmark has gained the attention of the whole world promoting a healthy lifestyle for urbanizing cities with the vision of making them more humanistic and people-friendly.

Mental wellbeing

The current busy lifestyle burdens people with many stresses which are in many ways act as promoting factors of NCDs. A healthy individual should have a sound mind as well as a sound body. Thus our attention should be focused on promoting mental health as well.

With the vast improvement in the technology and communication, human-machine interaction has replaced most of the human to human interactions. We tend to watch television during meal time rather than talking with the family members. Kids play video games rather than playing outside with friends. We are moving towards an indolent community who depend on machines. Thus as adults it is our responsibility to guide these confused kids and protect our culture of family based community. Neglecting our responsibilities and neglecting the proper awareness of our children, in my point of view can be considered as 'child abuse'.

Meditating also has a proven benefit in improving mental health and also stimulates the metabolic events in the body improving our digestion and removal of waste products. For example studies have supported that Yoga helps preventing NCD by reducing the tendency for obesity. Many of the religions accept meditation as a method of creating a sound mind. It is the sense of imbalance in both body and mind that may up-surge the disease. Out of all the religions in the world Buddhism conveys this massage in a scientific fashion and the given solution is meditation.

Globalization and industrialization have fuelled the spread of both communicable and non-communicable diseases. Sri Lanka has successfully won the battle against communicable diseases, but NCDs keeps on rising engulfing our nation. It is time to tackle this problem with a different vision, "Turn back to win the future". These cost effective, free tested interventions can be implemented via a very simple effort, "talking". Talking with our children, having a family discussion will pass our wisdom across our younger generation making it a possibility to compete with the rapidly developing world with minimum deviation from our healthy and prosperous traditions.

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Constipation in Children

Dr Maithri Rupasinghe

Constipation in childhood is the infrequent passage of stools leading to 1 or more of the following: painful defecation; overflow faecal incontinence; rectal faecal impaction; or active defecation avoidance behaviour.

Constipation in children is a common problem worldwide presenting to general practitioner. According to the systematic literature reviews prevalence of childhood constipation ranges from 0.7% to 26.9%.1
In majority of children, no causative factors can be found. Childhood constipation occurs as a result of a combination of painful defecation and a rectum of sufficient capacity to allow stools to be withheld. This leads to initial hard stools, often due to low fibre, poor nutrient, and/or insufficient water intake or, less commonly, due to delayed colonic motility.2 The excessive colonic time for stool transport leads to high levels of colonic reabsorption of water and further hardening of the stool. This in turn progress to:

- Pain on passing the stool, (leading to involuntary and later learned sphincter contraction to avoid discomfort).
- Increasing delays between episodes of defecation (leading to enlargement of residual stool volume in the rectum).
- Further increase in the size of the loaded rectum and more effective withholding tactics
- Increase in pain and fear as delayed stool is incrementally larger and thus even more painful.
- Eventually, overflow faecal incontinence occurs.

The constipation in children seems to be familial with a positive family history in nearly 50% of all severe cases.[3]

Although the aetiology of constipation in 90% to 95% of children is functional, a number of organic causes like perianal group A streptococcal infection, food intolerance (particularly cows' milk), trauma to the anus and psychological problems like autism and ADHD have been identified. Rarer causes of constipation include those presenting in the first weeks of life, such as Hirschsprung's disease or anorectal anomalies. Withholding of stools and the distressing nature of faecal incontinence may lead to psychological dissociation and denial of symptoms or their importance.[3]

History and examination findings are often sufficient to diagnose the condition. Other investigations are unnecessary in the initial assessment.

Constipation can be present at 3 stages of childhood: in infants at weaning, in toddlers acquiring toilet skills, and at school age.[1]

Symptoms vary from mild and short-lived to severe and chronic, and are sometimes accompanied by faecal impaction, faecal

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Symptoms vary from mild and short-lived to severe and chronic, and are sometimes accompanied by faecal impaction, faecal and urinary incontinence, UTI, and occasionally abdominal pain.

Refusal to use the potty or toilet is a key element in children 3 to 4 years of age. Overflow faecal retention often temporarily relieved by the passage of very large stools is typical of children over this age.
With increasing age, the impacted stool in the mega rectum is rare and overflow faecal incontinence is the commonest complaint.
Inspection of the anus in infancy may reveal abnormal position or appearance. At any age the anus may reveal anal fissure as

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a cause of the painful defecation, or intense erythema typical of streptococcal infection. Fissures that extend beyond the anal canal and lacerations or bruising,should alert suspicion of childhood sexual abuse.

Inspection of the abdomen often shows mild or lower abdominal distension from either the loading of the distended rectum (megarectun) or large bladder. Palpation of the abdomen reveals a central mass arising from the pelvis often to above the umbilicus. However, stools that have been softened by medication may be impossible to feel, and so this sign of retention may be missed. The abdomen can also be tender to palpation with significant stool retention. The child is usually well and growing normally, although decreased appetite is common in children who have significant stool loading.

A full neurological examination need to be done to evaluate for a neuropathic cause of the constipation.

Although not routinely used, abdominal x-ray and abdominal ultrasound are tests that may be used to confirm the diagnosis. http://bestpractice.bmj.com/best-practice/monograph/784/resources/references.html - ref-24 Rectal biopsy, endoanal US scan, and anorectal manometry can be used to exclude possibility of Hirschsprung's disease. Psychological assessment can be used to guide effective management.[4, 5]

Constipation can vary from mild and short duration to severe and chronic. It can be associated with faecal impaction, faecal and urinary incontinence, UTI, and occasionally abdominal pain. At all ages, the aim of treatment is to achieve early relief of pain on defecation to prevent voluntary avoidance of defecation.[6]

For constipated children with no impaction softening the stool with laxatives and improving water, food, and fibre intake is usually enough. Psychological, social and behavioural issues that may be associated with the condition should also be addressed.[7]

Dietary changes remain an important recommendation, particularly increased intake of fluids and dietary fibre. Prune and pear juice have also been found to have positive results. A trial of removal of milk from the diet may also help. Increase in physical activity may be indicated for older children.[8]

Laxatives and faecal softeners can be used to soften the stools and ensure that bowel movements occur at normal intervals with good evacuation, to prevent progression to chronic constipation and faecal impaction. Osmotic laxatives such as polyethylene glycol (PEG) electrolyte solutions or lactulose, or faecal softeners such as docusate or mineral oil/liquid paraffin, have been shown to be effective. There is evidence that PEG is more effective than lactulose in the treatment of chronic constipation in terms of stool frequency per week, form of stool, and relief of abdominal pain. PEG has also been shown to be superior to other osmotic agents with regard to taste and patient acceptance.[9]

The anxiety of both parent and child should be addressed. The child may fear painful defecation, and parents need to understand

that forcing toilet training in this situation will be ineffective. In older children, faecal incontinence and its social consequences need a sympathetic management approach. It may be necessary to repeat the education several times during treatment.

Regular toilet habits and behavioural modification are important aspects of treatment. Unhurried time on the toilet after meals is recommended, with relaxation techniques encouraged. A reward system, especially one linked with successful use of the toilet as opposed to clean pants, is important. A diary of stool frequency could be recommended.

In constipated children with impaction the first stage is to ensure complete evacuation of any retained stools in the rectum. Overflow faecal incontinence because of faecal impaction will not be resolved without the evacuation of the retained stool in the rectum. Disimpaction may be accomplished with either oral or rectal medication. The rectal approach is faster than the oral route but more invasive. The major harm from disimpaction depends on the intensity and the route of administration. For example, the use of an NG tube to give the PEG solution, or the rectal route for enemas, may increase the child's fear and intensify the psychological disturbance. Furthermore, repeated use of phosphate enemas may lead to water and electrolyte disturbance.10
Osmotic laxatives, such as PEG electrolyte solutions, have been shown to be effective. Other oral medications for initial disimpaction include the osmotic laxatives lactulose, glycerine, and magnesium salts such as magnesium citrate, and the stimulant laxatives senna and bisacodyl. PEG appears to be a safe medication. However, there have been no long-term studies completed in children. There is consistent evidence that PEG is superior to lactulose with regard to rates of clinical remission, improvement in symptoms, and patient tolerance.[11]

In general, treatment approach depends on age. For infants, softening the stool with laxatives and improving fluid, food, and fibre intake is usually sufficient. Older children may require suppositories, incrementally increased doses of PEG, or an enema (e.g., phosphate laxative) to clear the impacted rectum.

Children with no impaction should maintain dietary improvements and behavioural modification (unhurried time on the toilet after meals, a reward system linked with successful toilet usage, and a diary of stool frequency), and use osmotic laxatives to establish normal bowel habits.

For children with impaction, maintenance treatment may be protracted and depends on the duration of the problem. There may be considerable difficulty in using sufficient medication to empty the rectum, but not so much as to increase the degree of faecal incontinence. Adherence to medication by the child who links treatment with defecation and so refuses both can be a major problem, as can the parent who dislikes prolonged medication for the child. Generally, it is necessary to maintain medication until the child has achieved regular bowel movements without difficulty. It is essential to prevent re-accumulation of faeces by maintaining

sufficient softener (e.g., osmotic laxatives, such as PEG and lactulose) and stimulant laxative (e.g., senna or bisacodyl) to oppose the withholding behaviour that tends to lead to incomplete rectal emptying. There is conflicting response to prolonged use of stimulant laxatives as they have been found to be useful when used short-term and in the acute setting, but no information is available for long-term tolerance and safety. Dietary improvements and behavioural modifications should be encouraged.[12]

Follow-up for children with constipation depends on the severity of symptoms and an estimate of the vulnerability of the child and family. As adhering to treatment regimens is often difficult, on going contact with the family is important. The general practitioner at follow-up needs to confirm complete emptying of the rectum, either by careful palpation of the abdomen or by using abdominal ultrasound, to ensure that even soft stools are not accumulating. This is particularly important in those children who have on going faecal incontinence despite effective use of stool softeners and evacuants.

Children who are resistant to treatment needs referral to a specialist for further assessment

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Dr. M.S.A. Ameer

Introduction

Maternal and Perinatal Mortalities are very much better in affluent parts of the world compared to the rest of the world. Sri Lanka is not far beyond this level. This is due to better obstetrics and neonatal facilities provided by these countries.

Antenatal Care

A normal healthy female in her reproductive age group when her confirmation of the pregnancy is established should book herself in a well equipped obstetric unit with all the facilities for a safe delivery. Booking should take place during the first 12 weeks of pregnancy so that the following investigations such as Hb, urine for protein and sugar, blood group, Rh, V.D.R.L. and an ultrasound scan and if there is a history of HIV a blood test to check whether the mother is HIV positive. The ultrasound scan which is performed at 12 weeks will determine the gestational age of the fetus in question and verify her dates.

Timing of Antenatal Visits

From 12 weeks till 28 weeks, a monthly antenatal visit is requested. From 28 weeks to 36 weeks visits should be every 2 weeks and from 36 weeks up to delivery it should be weekly. At these visits the BP is taken and urine for protein is carried out. Abdominal palpation to determine the following:-

(a) The lie of the fetus, whether it is longitudinal or transverse
(b) Whether the presenting part is engaged or not
(c) Assess the amount of liquor amnii
(d) Auscultation of the fetal heart by means of a Pinard's fetoscope
(e) At 28 weeks or more, the ultrasound scan is carried out for a full comprehensive picture of the fetus
(f) The weight of the mother is determined at every antenatal visit

In Labour

The modern concept of labour management is by a principle called "ACTIVE MANAGEMENT OF LABOUR" which means minimal risk labour and labour should not be for more than 8 - 12 hours. It is barbaric in modern obstetrics to subject a mother for more than 12 hours of labour.

Only mothers in established labour are admitted to the labour suite as the labour suite is considered as an Intensive Care Unit. Labour is started on a "Partogram" which is a graphical representation of progress in labour where cervical dilatation is plotted against time. Zero on the partogram is considered as the time of admission of labour. This partogram consists of all observations in labour such as fetal heart rate, frequency and severity of contractions, dilatation of cervix and the state of liquor amnii whether it is clear or meconium.

To distinguish a primigravida from a multigravida a colour scheme is introduced in the partogra. In advance obstetric units cardiotopography is used to monitor the uterine contractions and the fetal heart rate using this device. In certain units fetal blood sampling facility is available to assess fetal distress and to determine the pH value which indicates whether the fetus is compromised or not.

Pain Relief in Labour

Traditionally, Pethidine and Antiemetic is used in about 2-3 doses. In modern obstetrics an epidural anaesthetic is introduced into the epidural space of the fourth lumbar vertebra and local anaesthetics such as xyclocaine 2% is initially given via the epidural catheter followed by Bupivicaine.

Operative Deliveries

(a) Forceps deliveries – Direct application of forceps using Wrigley's forceps or Neville Barns forceps.Ventuose cup is used in case of deep transverse arrest of the fetus in question or Lower Segment Caesarean Section (LSCS).

(b) Ventuose delivery – This method entails using a metallic or a plastic cup applied onto the fetal head under vacuum so that the delivery is carried out.

(c) Caesarean section – Julius Caesar was not born by a caesarean section. It was another Caesar who promulgated a law called "Lex Caesara" which indicated a mother who cannot be delivered through the normal vaginal route an abdominal route is indicated. The modern concept of caesarean section has been enlarged to include a number of indications. Normally, it is a relative indication for the mother and the baby. However, there are indications such as third degree placenta praevia which is an absolute indication. Today, there are social indications for this operation such as mothers willing to undergo only a caesarean section or astrological reasons or to time the child's birth to the school to which he/she is to be admitted.

Complications of Pregnancy

Gestational Diabetes

These patients become diabetic during pregnancy only. Pregnancy itself is a diabetogenic problem. There is no place for oral hypoglycaemic agents. The sheet anchor of treatment is Insulin. These mothers are better managed by a physician and an obstetrician. The requirements of Insulin increases as the pregnancy progresses careful monitoring of the blood sugar and the mother and fetus should be carried out. Delivery should be at 38 weeks of pregnancy in the most appropriate way. This 38 weeks is crucial as fetal deaths have been reported after 38 weeks. (Metformin is now used to control blood sugar without any harmful effects).

Hypertension

There are two types of hypertension:-

(a) Pregnancy induced hypertension (Pre Eclampsia) a normotensive mother develops hypertension after 28 weeks of pregnancy followed by protein in the urine. The mother and the fetus should be monitored even being admitted to

hospital to monitor the fetus and urine for protein and maintain daily fetal movement charts. If this is not properly treated this could lead to Eclampsia which is a catastrophic for the mother and baby. An American Obstetrician says "Eclampsia comes as a bolt of thundering", therefore vigilance is required in these cases.

(b) Hypertension Associated with Pregnancy – A hypertensive mother becomes pregnant and this can cause problems for the fetus as well as the mother. The drug of choice is Aldomet which is safe for the mother and fetus as it is a centrally acting drug. Prof. Michael De Swiet, an Oxford Physician has clearly stated that Aldomet is the drug of choice in these cases.

Mal Presentation

Persistent Occipito Position

65% of these fetuses will deliver face to pubes. However, in a minority of cases, rotation forceps or a Ventuose extraction has to be used.

Breach Presentation

There are two types of breech presentation:-

(a) Complete or an extended breech
(b) Incomplete or flexed breech

The axiom is breech plus a problem = Caesarean section

Vaginal delivery can be carried out if the following criteria are established:-

(a) Lateral Pelvimetry – Inlet and Outlet should be of adequate measurements.
(b) A baby less than 7 lbs and no abnormalities.
(c) A sacrum with a good curved sacral bay
(d) Extended head.

Breech delivery can be of two types:-

- Assisted breach delivery – if the mother cooperates with the contractions
- Breech extraction – This is a procedure which has to be done under anaesthetic and is not carried out in modern obstetric practice. LSCS is done instead.

Hand Prolapse

The ideal treatment is by Caesarian section. The older method called Scanzoni method is obsolete in modern obstetrics.

Puerperium

Breast feeding is to be established during this period a few hours after delivery by putting the baby on the breast. Breast feeding is indicated for about a year. In certain cases, milk reflex is not established therefore, drugs such as Maxolon is given three times a day to increase the yield of milk as this increases the level of Prolactin.

Puerperal Fever

Puerperal fever is rare today due to aseptic vaginal delivery and due to the advent of antibiotics

Puerperal Infection

This may be due to the lack of hygiene in the perineal area which has to be kept absolutely clean while urinating or defaecating. In certain circumstances the abdominal wound in Caesarean cases could

be infected a swab taken from the wound will indicate the correct type of antibiotic to be used depending on the culture and sensitivity report.

Puerperal Psychosis

This is best managed by a Psychiatrist who may use drugs such as Halaperidol and Artane.

Contraception

Oral contraception can be used as it does not interfere with the milk secretion. Other contraceptive measures such as a Copper + Device could be inserted into the vagina.

Sterilisation

In multigravid patients sterilization can be performed using:-

Mini Laporotumy – the Fallopian tubes are subjected to the following procedures:-

(a) Pomeroy's technique
(b) Madlener technique
(c) Uchida technique
(d) Viennese technique

Internal Sterilisation could also be performed using Laproscopy by Bipolar Diathermy or using Rings such as Falope Rings or Clips. All these sterilization procedures have a small failure rate which has to be communicated to the patient.

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Etiology of Traumatic Tympanic Membrane perforation in Ratnapura

Dr. M.C.Perera, Dr M.G.P.K. Muruthaghapitiya, Dr K M S N Kalupahana, Dr U M A P Madalagama and Dr. W.E.M.P.L. Ekanayake

Abstract

Introduction

Tympanic membrane perforation is a condition as old as the human species. It is a common presentation in an E.N.T. unit and a frequent cause of morbidity.

Objectives

The aim of the study is to profile the etiological factors of Traumatic Tympanic Membrane perforation occurring in Ratnapura.

Method

A descriptive, prospective serial study was done at General Hospital Ratnapura. We analysed patients with tympanic membrane perforation during the study period of 6 months which started from 1st April 2015.

Results

Fifty two (52) cases of traumatic tympanic perforations were seen. There were 21(40.4%) females and 31(59.6%) males. The mean age of younger patients (<20yrs) was 15years (STD 4) and in adults (>=20yrs) it was 35yrs (STD 9.8). The commonest etiology was due to blows to the ear (74.3%) and it commonly affects the left ear (80.8%) of the victim. The commonest symptom was hearing impairment (31%). Majority of the affected adults were females (51.4%) and the source of blow was by their husband (64.3%).

Conclusion

Traumatic Tympanic membrane perforation is a common presentation. Educating school going children and taking steps to change social attitudes against violence especially against women and taking punitive action against the assailants will help to reduce incidence of Traumatic Tympanic membrane perforation.

Introduction

Tympanic membrane perforation is a condition as old as the human species1. It is a common presentation in an E.N.T. unit and a frequent cause of morbidity. Trauma is in the increase and is a burden to a developing country like Sri Lanka. Trauma patients consume more health care resources than heart and cancer patients combined and the incidence from trauma is on the increase2, 3. In this view it is important to identify, the etiological factors of traumatic tympanic membrane perforation so that authorities can take preventive action in curbing such incidences.

Objectives

The aim of the study is to profile the etiological factors of Traumatic Tympanic Membrane perforation occurring in Ratnapura.

Method

This descriptive, prospective serial study was done at General Hospital Ratnapura. The study sample included patients getting admitted to the E.N.T. ward and visiting the clinic with a tympanic membrane perforation during the study period of 6 months which started from 1st April 2015. Only patients giving written consent were included in the study. The data was collected by medical officers using a questionnaire. Ethical clearance for the study was obtained from the National Institute of Health Sciences, Kalutara, Sri Lanka.

Results

The ENT unit had 2580 casualty admissions during this period inclusive of 52 cases of traumatic tympanic membrane perforations (TMP). These casualties consisted of 1 pre-school child (6 months to 4yrs), 16 school aged and 35 adults (>20years) (table 1).

Table 1: Age distribution of patients with traumatic TM perforation

Age (years)	*Frequency(%)*
<4yrs	1(1.9%)
4-20yrs	16(30.8%)
>20yrs	35(67.3%)
Total	52(100%)

Table 2: Age and Sex distribution of patients with traumatic TM perforation

	Age	
	<20yrs	>=20yrs
Male	14(82.4%)	17(48.6%)
Female	3(17.6)	18(51.4%)
Total	17(100%)	35(100%)

Table 3: Etiological profile of TM perforations

Etiology	Frequency(%)
Assault (Blow)	39(75%)
Self-trauma	6(11.5%)
Accidental Trauma	7(13.5%)
Total	52(100%)

Table 4: Presenting complaints of the patients

Presenting Complaint	Frequency(%)
Bleeding	7(6.2%)
Fullness	25(22.1%)
Hearing impairment	35(31%)
Pain	21(18.6%)
Tinnitus	22(19.5%)
Vertigo	2(1.8%)
Discharge from ear	1(0.9%)

There were 21(40.4%) females and 31(59.6%) males (table 2). The main cause of TMP was assault by a blow to the ear 39(75%) (table 3). The presenting symptoms were hearing impairment 35(31%), tinnitus 22(19.5%) and feeling of fullness in the ear 25(22.1%) (table 4). In 42(80.8%) of the cases the left ear was affected and in the rest 10(19.2%) the right ear was involved. None had bilateral TMP.

Table 5: Etiology and Sex in adults with TM perforations

Sex	Etiology		
Assault (Blow)	Self-Injury		Accidental
Female	14(40%)	1(2.8%)	3(8.6%)
Male	12(34.3%)	3(8.6%)	2(5.7%)
Total	26(74.3%)	4(11.4%)	5(14.3%)

Table 6: Source of Blow to ear in Adults according to sex

Source of Blow	Frequency(%)	
	Female	Male
Spouse	9(64.3%)	0(0%)
Sibling	2(14.3%)	1(8.3%)
Known person (non -family)	2(14.3%)	11(91.7%)
Unknown person	1(7.1%)	0(0%)
Total	14(100%)	12(100%)

In adults, more females 25(53%) were exposed to assaults by a blow than males 12(46.2%). Majority of females 11(78.6%) were assaulted by family members and out of it 9(64.3%) has been by their husbands at home and four (44%) of them were under the influence of alcohol. Only 2(14.3%) of the females were going to take legal action regarding the incidence.

Discussion

In human's tympanic membrane, is a thin, cone-shaped membrane that separates the external ear from the middle ear. It is an important component in increasing of sound energy transmission to the cochlear fluid relative to what would occur with a direct coupling of air to fluid[4].

Rupture of the tympanic membrane may be caused by changes in air pressure, by fluids or by solid objects5. The change in pressure is the commonest cause of tympanic membrane perforation in this study and most of this was due to trauma to the ear due to blows by hand (75%). The less common pressure induced causes were accidental trauma(13.5%) due to tennis balls hitting the ear and one case due to sound of thunder. Self-injury (11.5%) although less common, was almost all due to the fact of using cotton buds to clear ear wax.

The mean age of younger patients (<20yrs) was 15years (STD 4) and in adults (>=20yrs) it was 35years (STD 9.8). In small and school going age (<20yrs) the majority (82.4%) of TMP was in males. This could be due to their aggressive and active nature at this age. In adults (>=20yrs) both males (48.6%) and females (51.4%) were equally affected. The etiology of this was mainly blows to the ear (74.3%). In females the assailant in majority of these cases was the husband (64.3%) and occurred at home and almost half (44%) of this incidence was related to the use of alcohol. Only 2(14.3%) of the affected females were planning to go for legal action as the majority were scared of the consequences to their children due to such an action. The authors view is that this incidence is only the tip of the ice burg, as many of the females after TMP following domestic violence tend to get treatment in the private sector, so that their numbers in state sector statistics are minimal.

The main presenting symptoms were hearing impairment (31%), Fullness of the ear (22.1%), Tinnitus (19.5%) and pain (18.6%). The involved ear was mainly the left (80.8%). This could be due to the fact that most assailants being right handed with the victims facing them so that their left ear becomes more vulnerable.

TMP usually occur in healthy members in the community and the general prognosis is excellent[5]. The main factors which prevent TMP to heal are large tissue loss and local infection. In many cases no active intervention is needed. Masterly inactivity and educating the patient to keep the ear dry by preventing water from entering the ear canal will help in getting a good outcome. If the perforation fails to close spontaneously in 3-6 months surgical closure is indicated[5].

Conclusion

Traumatic Tympanic membrane perforation is a common presentation. It affects mainly the school age males and adults of both sexes. The commonest etiology is due to blows to the ear and it commonly affects the left ear of the victim. The commonest symptom is hearing impairment. Although the incidences of adult females with tympanic membrane perforation are much higher it is underreported as majority seek treatments from private sector medical practitioners. Educating school going children and taking steps to change social attitude against violence especially against women and taking punitive action against the assailant may help to reduce incidence of Traumatic Tympanic membrane perforation.

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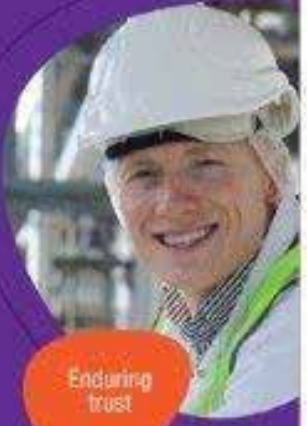

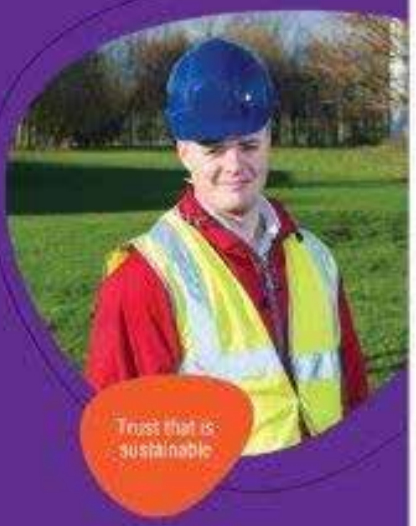

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AUGMENTIN 625 mg tablets: Each tablet contains 500 mg amoxicillin (as amoxicillin trihydrate) and 125 mg clavulanic acid (as potassium clavulanate).

AUGMENTIN 156 mg suspension: When reconstituted with 5 ml contains 125 mg amoxicillin (as amoxicillin trihydrate) and 31.25 mg clavulanic acid (as potassium clavulanate).

AUGMENTIN 312 mg suspension: When reconstituted with 5 ml contains 250 mg amoxicillin (as amoxicillin trihydrate) and 62.5 mg clavulanic acid (as potassium clavulanate).

PHARMACEUTICAL FORM

AUGMENTIN 375 mg tablets: A white to off-white oval-shaped film-coated dispersible tablet.

AUGMENTIN 625 mg tablets: A white to off-white oval-shaped film-coated dispersible tablet, with a score line on one side and plain on the other side.

AUGMENTIN 156 mg suspension: Bottles of powder for the preparation of fruit flavoured suspension.

AUGMENTIN 312 mg suspension: Bottles of powder for the preparation of fruit flavoured suspension.

CLINICAL PARTICULARS

Indications

AUGMENTIN is an antibiotic agent with a suitably broad spectrum of activity against the commonly occurring bacterial pathogens in general practice and hospital. The β-lactamase inhibitory action of clavulanic extends the spectrum of amoxicillin to embrace a wider range of organisms including many resistant to other β-lactam antibiotics.

AUGMENTIN should be used in accordance with local official antibiotic prescribing guidelines and local susceptibility data.

AUGMENTIN oral preparations for three times daily dosing are indicated for short-term treatment of bacterial infections in the following areas:

Upper respiratory tract infections (including ENT) e.g. tonsillitis, sinusitis, otitis media.

Lower respiratory tract infections e.g. acute exacerbation of chronic bronchitis, lobar and bronchopneumonia.

Genito-urinary tract infections e.g. cystitis, urethritis, pyelonephritis.

Skin and soft tissue infections, e.g. boils, abscesses, cellulitis, wound infections.

Bone and joint infections e.g. osteomyelitis.

Dental infections e.g. dentoalveolar abscess.

Other infections e.g. intra-abdominal sepsis.

Susceptibility to AUGMENTIN will vary with geography and time (see Pharmacological Properties, "Pharmacodynamics" for further information). Local susceptibility data should be consulted where available, and microbiological sampling and susceptibility testing performed when necessary.

Infections caused by amoxicillin -susceptible organisms are amenable to AUGMENTIN treatment due to its amoxicillin content. Mixed infections caused by amoxicillin -susceptible organisms in conjunction with AUGMENTIN -susceptible β-lactamase producing organisms may therefore be treated with AUGMENTIN.

Dosage and Administration

Usual dosages for the treatment of infection

in Adults and children over 12 years

Mild to Moderate infections: One AUGMENTIN 375 mg tablet 3 times a day. Severe infections: One AUGMENTIN 625 mg tablet 3 times a day. Where the 625 mg tablet is not available, a dose of two AUGMENTIN 375 mg tablets 3 times a day may be taken. Therapy can be started parenterally and continued with an oral preparation.

Children:

The total recommended daily dosage is 25mg/kg/day* to divided doses every eight hours. The table below presents guidance for children. Under 1 year 25 mg/kg/day*, for example a 7.5 kg child would require 2.5 ml AUGMENTIN 156 mg suspension 3 times a day. 1-4 years 5 ml AUGMENTIN 156 mg (10-18 kg) suspension 3 times a day. 5 to 9 years 5 ml AUGMENTIN 312 mg (18-40 kg) suspension 3 times a day.

In more severe infections the dosage may be increased up to 50 mg/kg/day in divided doses every eight hours.

*Each 25 mg AUGMENTIN provides 20 mg amoxicillin and 5 mg clavulanate.

AUGMENTIN 875 mg and 625 mg tablets are not recommended in children of 12 years and under.

Dosage in dental infections (e.g. dentoalveolar abscess)

Adults and children over 12 years: One AUGMENTIN 375 mg tablet 3 times a day for five days.

Contraindications

AUGMENTIN is contra-indicated in patients with a history of hypersensitivity to beta-lactams, e.g. penicillins and cephalosporins.

AUGMENTIN is contra-indicated in patients with a previous history of AUGMENTIN associated jaundice/hepatic dysfunction.

Warnings and Precautions

Before initiating therapy with AUGMENTIN, careful enquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins or other allergens.

Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. These reactions are more likely to occur in individuals with a history of penicillin hypersensitivity (see Contraindications).

Interactions

Concomitant use of probenecid is not recommended. Probenecid decreases the renal tubular secretion of amoxicillin. Concomitant use with AUGMENTIN may result in increased and prolonged blood levels of amoxicillin but not of clavulanate.

Concomitant use of allopurinol during treatment with amoxicillin can increase the likelihood of allergic skin reactions. There are no data on the concomitant use of AUGMENTIN and allopurinol.

Pregnancy and Lactation

Reproduction studies in animals (mice and rats) with oral and parenterally administered AUGMENTIN have shown no teratogenic effects. In a single study in women with pre-term premature rupture of the fetal membrane (pPROM), it was reported that prophylactic treatment with AUGMENTIN may be associated with an increased risk of necrotising enterocolitis in neonates. As with all medicines, use should be avoided in pregnancy, especially during the first trimester, unless considered essential by the physician.

AUGMENTIN may be administered during the period of lactation. With the exception of the risk of sensitisation associated with the excretion of trace quantities in breast milk, there are no detrimental effects for the infant.

Overdose

Gastrointestinal symptoms and disturbance of the fluid and electrolyte balance may be evident. Gastrointestinal symptoms may be treated symptomatically with attention to the water electrolyte balance.

Amoxicillin crystalluria, in some cases leading to renal failure, has been observed (see Warnings and Precautions).

AUGMENTIN can be removed from the circulation by haemodialysis.

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For more information please refer the full product information.

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