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IMPA NEWS

THE OFFICIAL NEWS LETTER OF THE INDEPENDENT MEDICAL PRACTITIONERS ASSOCIATION

FROM THE PEN OF THE PRESIDENT. . .

A CORONA RESEARCH BRIEF :

WHO estimate the global mortality at 3.4%. It is also concluded that current data suggest person-to-person transmission of COVID-19 might be most likely to occur through unprotected, prolonged exposure to a patient with symptomatic COVID-19. Despite recognition that transmission occurs mostly via symptomatic individuals, there are reports of asymptomatic individuals who transmitted the disease to multiple family members. SARS-CoV-2 is spread by droplet and contact. It is not principally an airborne virus.

It has also been reported that SARS-CoV-2 remained viable in aerosols throughout the duration 3 hours, with a reduction in infectious titer from 103.5 to 102.7 TCID50 per liter of air. This reduction was similar to that observed with SARS-CoV-1, from 104.3 to 103.5 TCID50 per milliliter. (https://www.nejm.org/doi/full/10.1056/NEJMc2004973?query=RP)

The research data suggest that differences in the epidemiological characteristics of these viruses probably arise from other factors, including high viral loads in the upper respiratory tract and the potential for persons infected with SARS-CoV-2 to shed and transmit the virus while asymptomatic. Research indicate that aerosol and fomite transmission of SARS-CoV-2 is plausible, since the virus can remain viable and infectious in aerosols for hours and on surfaces up to days (depending on the inoculum shed). These findings echo those with SARS-CoV-1, in which these forms of transmission were associated with nosocomial spread and super-spreading events,5 and they provide information for pandemic mitigation efforts.

(https://www.nejm.org/doi/full/10.1056/NEJMc2004973?query=RP) Therefore, ensuring routine droplet barrier precautions, environmental hygiene, and overall sound infection prevention practice is indicated.

CDC recommends the use of personal protective equipment including a gown, gloves, and either an N95 respirator plus a face shield/goggles or a powered air purifying, air-purifying respirator (PAPR).

However, airborne precautions are not used in daily, routine care of patients with general respiratory illness. The widespread use of recommended barrier precautions (such as masks, gloves, gowns, and eye wear) in the care of all patients with respiratory symptoms must be of highest priority. In emergency departments, outpatient offices, homes, and other settings, there will be undiagnosed but infected patients, many with clinically mild cases or atypical presentations. There is limited availability of N95 masks, respiratory isolation rooms, and PAPR, particularly in outpatient offices, to feasibly evaluate every patient with respiratory illness and such measures are not routinely necessary.

Protection is achievable even without N95 masks or PAPR. In a study of outpatient health care personnel in diverse ambulatory practices, medical masks applied to both patient and caregiver provided effectively similar protection as

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Indication: Used in backache and muscular pain

Voltaren

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Pain reduces by half, after **24 hours**†[1]

*vs placebo in acute neck pain † Pain at rest in acute neck pain

References: 1. Predel HG. *et al.* efficacy and safety of diclofenac diethylamine 1.16% gel in acute neck pain: a randomized, double-blind, placebo-controlled study. *BMC Musculoskeletal Disord.* 2013;14:250. **2.** Brune K. Persistence of NSAIDs at effect sites and rapid disappearance from side-effect compartments contributes to tolerability. *Curr Res Opin.* 2007; 23:2985-95.

Use as directed on pack. Do not exceed recommended dose and frequency, as excessive dosage could be harmful to the liver. If fever persists, consult your doctor.
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CHSRI/CHPAND/0003/18

N95 masks in the incidence of laboratory-confirmed influenza among caregivers who were routinely exposed to patients with respiratory viruses. Adherence to CDC evidence-based guidelines for masks, hand hygiene, and environmental hygiene enhances the safety for health care workers.

Rigor in the use of recommended precautions for all patients with respiratory illness is especially important : Placing a facemask on the patient at arrival, supplying tissues, promoting cough etiquette, and providing for hand hygiene and surface decontamination are all important steps.

Those patients with symptoms of suspected COVID-19 should be rapidly triaged and separated from the general population ideally in a well-ventilated space with a distance of at least 6 feet from others until they can be placed in an isolation room.

Caregivers who encounter any patient with respiratory illness should wear a mask and gloves, with goggles as recommended.

The consequences of delayed recognition of a patient with COVID-19 are significant. Contact tracing for exposure to a case of COVID-19 is no longer routinely recommended, so health care workers must consider themselves at elevated risk of exposure. Health care workers must self-monitor, report symptoms of illness of illness, and not engage in patient care while exhibiting infectious symptoms.

Recognizing that symptoms of COVID-19 may be mild, the development of pragmatic policies for health care workers who have respiratory illness should be considered.

Dr. Ananda Perera

HYPONATREMIA - RECOGNITION AND MANAGEMENT IN PRIMARY CARE - CASE BASED DISCUSSION

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Introduction

Hyponatremia is not an uncommon electrolyte abnormality seen in general practice, it can be precipitated by underlying causes. It is related to a wide range of etiological factors, including low salt intake, exercise-associated, due to certain medication such as an SSRI, inappropriate secretion of antidiuretic hormone (SIADH), and fluid retaining condition such as heart failure, etc. It is associated with an increase in mortality and morbidity in some patient groups including older patients. Hyponatremia increases the risk of falls and osteoporosis as well. Although most hyponatremia patients may appear to be asymptomatic, chronic mild to moderate hyponatremic patients may have an increased risk of gait abnormalities and cognitive defects, in acute severe cases can be associated with mental state changes, including the risk of coma and seizures. Diagnosis of hyponatremia mainly based on history, examination, laboratory studies, and assessment of the volume status of the patient. The treatment is based on the severity and underlying causes.

This article will focus on the diagnosis, investigation and management of sever hyponatremia in primary care.

Case History-1

Mrs. PK a 72- year-old regular patient presented with worsening cough, loss of appetite, shortness of breath, fatigability, and sleepiness. Her cough was productive with yellowish sputum. One week back she developed fever, chills, and malaise along with the cough for which she was being treated. Despite medications, her cough was persisting without any fever. As she felt unusual sleepiness she was accompanied to the clinic. Her urine output was normal, she had no vomiting and she had normal bowel habits.

Her past medical history included type 2 diabetes, hypertension, and, ischemic heart disease. Mrs. PK was on multiple medications, including metformin 500mg bd for diabetes, Losartan 50mg for hypertension and aspirin 75 mg nocte, and Atorvastatin 10 mg nocte for ischemic heart disease. Her pressure and blood sugar were under control. According to her husband, she skips meals, takes a low salt diet, and has had previous hypoglycemic episodes where medications were needed to be adjusted accordingly.

She lives with her husband and has good family support.

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She has no food or drug allergies **On examination** - early phase of consultation the patient was conscious, rational and alert. However, during the latter part of the consultation the patient became drowsy but responded to commands.

She had B/L crepitation and rhonchi with left side reduced air entry.
BP-100/80, pulse regular and good volume
No neurological deficit except for drowsiness
CBS-145mg/dl
ECG-No ischemic changes
As the patient was drowsy and clinical features suggestive LRTI (? Pneumonia) the patient was sent to the hospital by an ambulance after informing the PCU doctor in charge
(Considering CURB-65 and other red flag symptoms patient need admission)

The Patient was treated for respiratory infection and further investigations in the hospital showed severe hyponatremia (121mmol/l) with low serum osmolality and raised urine osmolality. All other tests were normal. Therefore, the patient was treated as euvolemic hyponatremia (SIADH) secondary to a chest infection. She was discharged after 5 days, after full recovery and advice on salt therapy.

Case History-2
Mrs SW, 76 years of age, presented with frequent muscle cramps, and daytime sleepiness.

She had been feeling unsteady on her feet for the past week, but her mental state and vital signs were normal, and there were no neurological deficits on examination. Her past medical history included diabetes and hypertension, dyslipidemia and chronic back pain.

Mrs SW was on multiple medications, including, Losartan for hypertension, Atorvastatin, fluoxetine, NSAID for chronic back pain, and esomeprazole.

Investigations
- FBS-130mg/dl
- S sodium-129mmol/dl--------Rpt after one week-129mmol/dl
- K-4.5mmol, S.creatinine , eGFR, LFT, TSH, FBC – within normal limits.
- Low serum osmolality, and raised urine osmolality and sodium

With reference to the clinical and biochemical data, a diagnosis of hyponatremia secondary to SIADH was made. An endocrinologist opinion was taken for further management of chronic hyponatremia. The most likely precipitants for her SIADH were thought to be fluoxetine and Losartan. Serum sodium improved following fluid restriction of 1000 mL/24 hours with close supervision at the primary care level.

Discussion
Adult hyponatremia in primary care
- Hyponatremia, a common electrolyte abnormality seen in general practice, as well as hospitalized patients, can have a multitude of underlying causes. The most common causes include medication effects, fluid retention, and syndrome of inappropriate antidiuretic hormone secretion (SIADH). Low serum sodium levels have been linked to increased mortality in some patient groups, including hospitalized patients, older people, and those with heart failure, liver failure, or pneumonia. Hyponatremia increases fall and osteoporosis risks and, in severe cases, it can be associated with mental state changes, including the risk of coma and seizures.

- Mild chronic hyponatremia is not benign as previously thought -associated with unstable gait, cognitive slowing, recurrent unexplained falls, a higher fracture rate, osteoporosis and, declines in cognitive function. Further, it can directly contribute to the increment of morbidity and mortality.

- Hyponatremia is common in women, elderly, individuals who engage in vigorous exercise while ingesting excessive water, individuals who intake a little amount of protein while consuming large amounts of water and patients with mental illnesses who devour large amounts of water

Definition
Hyponatremia is defined as a serum sodium concentration below 135mmol/l In general, investigations are carried out if Na<130mmol/l with the association of cognitive decline excluding any obvious symptoms. Mild or slowly (gradually) developing hyponatremia is usually asymptomatic.

Classification of hyponatremia
There are several methods of classifying hyponatremia including Na levels, serum osmolality and fluid status of the patient.

Table 1. Classification - classified according to Na levels in the blood

Mild Hyponatremia	Na 125-133mmo/l
Moderate Hyponatremia	Na 115-125mmol/l
Sever Hyponatremia	Na<115mmol/l or mild symptoms
Significant Hyponatremia	Symptoms of brain oedema or Acute onset

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- **Chronic hyponatremia** should be assumed if the rate of sodium reduction is uncertain. Sodium should not be corrected rapidly to avoid osmotic demyelination syndrome.

- **Acute hyponatremia** Na has fallen >10mmol/l in <48 hours.

and gradual reduction of sodium results in minimal symptoms while acute and severe reduction gives rise to symptoms such as lethargy, drowsiness, confusion coma, or seizures. Acute severe hyponatremia is an emergency condition that needs a structured approach to clinical assessment, investigation, and treatment to minimize the most serious complications of the

Table 2. Classification - based on fluid status

Hypovolemia Hyponatremia	Extracellular fluid volume is reduced Diuretics, Vomiting, diarrhea, Acute Kidney Injury Nephritis, Renal disease, Addison's disease
Hypervolemia Hyponatremia	Extracellular fluid is increased CCF, Chronic Liver Disease, Nephrotic syndrome, Protein Loosing enteropathy
Euvolemia Hyponatremia	Extracellular fluid volume is normal. It is the most common form of hyponatremia. Causes include: Medications - **"CAR DISH"** **C**hemotherapy **A**ntidepressants, antipsychotics, anticonvulsants, anti-inflammatory drugs (cyclooxygenase - 2 inhibitors) Antibiotics, Antiarrhythmic **R**ecreational drugs (eg ecstasy) **D**iuretics **I**nhibitors – angiotensin converting enzyme inhibitors, selective serotonin reuptake inhibitors **S**ulfonylureas **H**ormones (eg desmopressin, oxytocin), hypnotics (eg temazepam) SAIDH Exercise-associated Hypothyroidism, Hypopituitarism, Law salt intake, Chronic alcoholism, Polydipsia, Reset osmostasis

Pseudohyponatraemia

High glucose can cause a hypertonic hyponatremia and it does not cause cerebral edema. It also can occur due to high triglycerides or paraproteinaemia

Evaluation of hyponatremia - Aim to identify possible causes and decide the best treatment. This is mainly achieved through clinical evaluation and laboratory investigations.

Clinical assessment

Symptoms of hyponatremia based on its severity and rate and duration of sodium depletion. Chronic condition and its treatment.

Management in primary care

1. Rule out hyperglycemia and pseudohyponatremia
2. Fluid status - Assess the volume status
3. Assess the medications
   If taking medication which causes hyponatremia stop them and repeat Na in 1-2 weeks
4. Check for disorders
   Intercurrent illness especially chest infections, GI and UTI
5. Investigation Panel

Table 3. Primary Care Management Plan

What samples do I need?	Blood: U&E (includes eGFR), random glucose, 9 am cortisol, osmolality TSH – if no recent result available Early Morning Urine: Sodium and osmolality
Who to admit	Admit those with symptoms or Na <115 mmol/l or who are hypovolemic Symptomatic patient with moderate hyponatremia If there is a risk of Na falling quickly, there is a need of admission
Who can be manage in primary care	Patients with mild hyponatremia and asymptomatic All the patients with new onset should have repeat Na check after 1 week to exclude rapidly decreasing levels.
When to refer	Endocrinology cause Suspected SIADH Cancer Primary polydipsia

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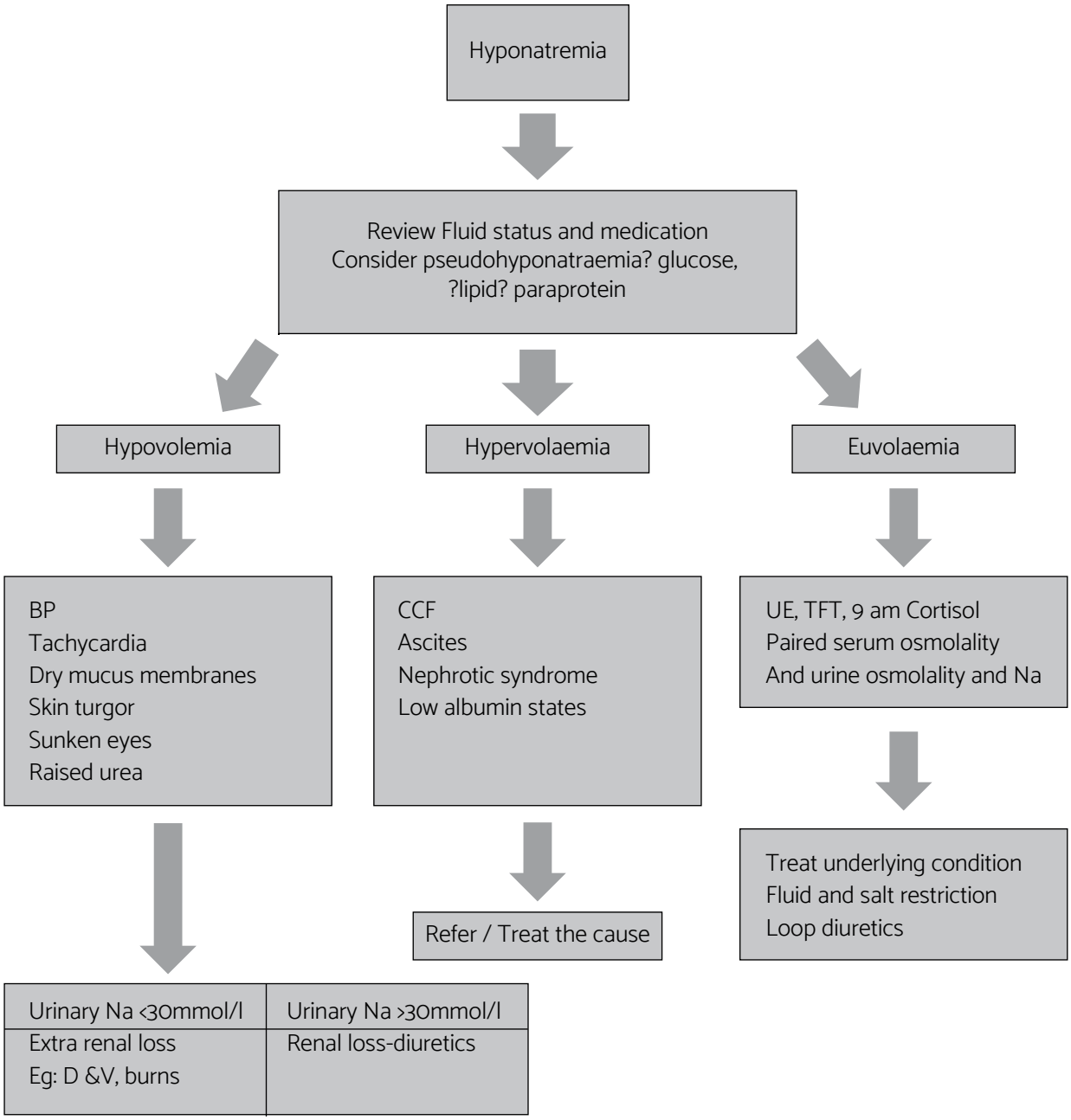
Figure 1. Management of Hyponatremia



Conclusion

Hyponatremia is associated with increased morbidity and mortality. Severe hyponatremia is also associated with prolonged hospitalization, coma, and death. Severe hyponatremia is therefore a medical emergency, requiring intensive care. Therefore, general practitioners have a crucial role in preventing the development of severe symptomatic hyponatremia and this begins with the simple suspicion of an underlying cause. Further, early identification and treatment of chronic hyponatremia improve the quality of life of the patients.

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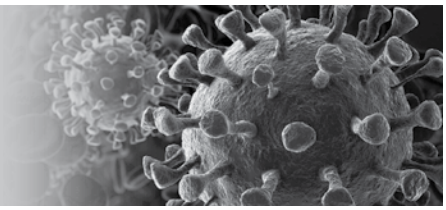
COVID NEWS

COVID - 19 - SCIENCE, CLINICIAN AND THE PROGRESS SO FAR



January 7th Chinese scientists identified the novel SARS-COV2 as the cause of hitherto unidentified cases of pneumonia. Now into the 5th month of the pandemic claimed almost 5 million documented cases of COVID 19 and x number of deaths. Virus was sequenced within a week and within 3 months first vaccine trials initiated. By early may remdesivir trial results showed it to be promising but statistically non-significant. Currently other than remdesivir, monoclonal antibodies, several novel antivirals, lopinavir, ritonavir, hydorxyqhloroquine and azithromycin are being tested and trialed.

Development of a vaccine is a priority in the developing science of COVID 19. But mass availability is not expected until early 2022. Two concepts which have been much discussed are immune pass ports and the herd immunity. While WHO holds the view that there is no evidence for post infection immunity many others do not subscribe to this view as they argue that antibody response for the infection suggests otherwise. There is no definitive guidance on the sero-prevalance nor antibody testing in the community. The concept of herd immunity is also invoked to understand the transmission dynamics. While as the term is understood currently it means the relative reduction of the disease transmissibility due to reduced number of infected patients after successful vaccination program. It has been suggested at least 60% of the population need to be vaccinated to achieve a herd immunity against COViD 19.

Another important issue being discussed at the moment is the second wave phenomenon. As the usual public health restrictions are released there is a growing concern whether another deadlier second wave is possible. While this belief is grounded on the data from 1918 Spanish Influenza epidemic nothing definite can be predicted regarding this matter scientifically at the moment.

Despite much progress and research there is no evidence for a therapeutic or preventive solution in the immediate future. It appears that we may have to continue to engage in fundamental public health approaches to the problem like social distancing, frequent hand washing, wearing masks in the public, staying at home if feeling sick for the foreseeable future.

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