

Therapeutic Discussion: Fluids & Electrolytes

VIHA Hospital Pharmacy Residency Program

Session Facilitator:

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This is a broad topic that is difficult to do in two sessions. For this reason, I will do more presenting than I typically do. With that said, please review the readings as I will be asking lots of questions and I would like to give you scenarios to think through. The list of readings is heavy for the first week but lighter for the second week.

Pre-session objectives (focus of pre-readings)

From the pre-readings provided, the Pharmacy Resident should be able to:

1. Identify the information found in the IV monographs, with focus on the dosing, monitoring, and administration requirement information.
2. Understand the principles of managing the different subtypes of hyponatremia.
3. Understand the different etiologies of hypokalemia, including transcellular shifts.
4. Identify treatments for hypokalemia and describe the place in therapy and constraints / limitations for each.
5. List causes of and treatments for hyperkalemia and describe when each treatment may be considered.

Session objectives

1. Understand the principles of fluid shifts and “volume”.
2. Identify clinical monitoring parameters for fluid balance and select optimal fluid options and rates for volume resuscitation.
3. Review the types of hyponatremia, and the treatment & monitoring strategies for each.
4. Review the treatment and monitoring strategies for hypokalemia.
5. Review the treatment and monitoring strategies for hyperkalemia.
6. To put the principles of the above objectives into practice with cases.
7. To briefly discuss the role and management, including common dispensary questions, for the following electrolyte disturbances: hypomagnesemia, hypophosphatemia, hypocalcemia, hypercalcemia.

See Pharm\$\\Therapeutic Sessions\\Fluids & Lytes to download tables

Pre-Readings Week #1:

1. Maxwell AP, Linden K, O'Donnell S, et al. Management of hyperkalaemia. J R Coll Physicians Edinb 2013; 43:246–51
2. Hohertz B, Seupaul RA, Holmes TM. Are Colloids Better Than Crystalloids for Fluid Resuscitation in Critically Ill Patients? Annals of Emergency Medicine Volume 65, no. 4 : April 2015
3. Gennari FJ. Hypokalemia. NEJM 1998 Volume 339 Number 7. p451-458
4. Sterns RH. Disorders of plasma sodium – causes, consequences and correction. NEJM 2015;372:55-65

Pre-Reading Week #2

1. Chang WW, Radin B, McCurdy MT. Calcium, magnesium and phosphate abnormalities in the emergency department. Emerg Med Clin N Am 32 (2014) 349–366
2. Westerberg DP. Diabetic ketoacidosis: evaluation and treatment. American Family Physician 2013;87(5):337-346B