Oral Abstracts

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ACUTE DYSNATREMIAS IN CLINICAL TOXICOLOGY

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Abstract: Being the most important extracellular ion it is not surprising that sodium disturbances are the most common electrolyte disorder in clinical medicine – and among these hyponatremia is by far the most common. Within clinical medicine electrolyte disturbances have traditionally been part of nephrology – with the endocrinologists taking special interest in patients with hyponatremia being common in their diseases such as the SIADH syndrome (syndrome of inappropriate secretion of the antidiuretic hormone). Interestingly, most recommendations are based on the assumption that these sodium disturbances, especially hyponatremia, are of chronic nature with no consideration of acute cases.

In brief, sodium disturbances may also be classified as acute (< 48 hrs duration) or chronic (> 48 hrs duration). In the chronic cases the osmotic disturbance is partly compensated for by the production of osmolytes (osmotic active substances) - especially important in hyponatremia. In this situation, the potential danger is not from the condition itself, but from the treatment if corrected too quickly. In the acute disturbances, however, it is the condition itself that may be life-threatening and this should therefore be corrected quickly. As a rule of thumb, sodium disturbances should always be corrected in the same speed they were developed.

In our MICU and observation unit we found that the few acute hyper- and hyponatremias we have treated have mainly been related to clinical toxicology: Acute hypernatremia (s-Na up to 220 mmol/L) have been caused by salt (NaCl) poisoning. Acute hyponatremia was usually related to intake of NPS (newer psychoactive substances) and subsequent thirst and heavy water intake – as also mentioned in the scarce literature on these topics. Interestingly more information is found on the internet. In these cases the treatment often appears to have been wrong and patients have died – usually a negative incitement for publication.

The aim of this presentation is to focus on the difference between acute and chronic sodium disturbances – and strongly emphasize the difference in handling of these cases. Acute disturbances must be diagnosed and treated quickly – in the same time frame that they were developed. Our cases together with cases from the literature will be presented and discussed to support this approach. As such one could argue that acute dysnatremias are an important part of clinical toxicology.

Learning Objectives:

1. Understand why distinction between acute and chronic dysnatremias is important.
2. Understand that in chronic dysnatremias (developed in > 48 hrs), it is the treatment that could be potentially dangerous.
3. Understand that in acute dysnatremis it is the lack of rapid and correct treatment that is potentially dangerous and deleterious.
4. Explain why acute dysnatremias may be considered as an important part of clinical toxicology.