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A) COMMENTS ON PUBLISHED ARTICLES

The role of interleukin 6 in the pathogenesis of hyponatremia associated with Guillain-Barré syndrome

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To the Editor,

We read with great interest the contribution by Monzón et al.[1] They reported a significant case of a man who had Guillain-Barré syndrome (GBS) with syndrome of inappropriate antidiuretic hormone (SIADH) and speculated that increased sensitivity to vasopressin in the renal tubule and a long-lasting hypo-osmolarity or antidiuretic substances might cause GBS-related SIADH. However, we would like to add a possible pathomechanism in the development of hyponatremia associated with GBS.

According to a previous study by Maimone et al.,[2] interleukin (IL)-6, a multifunctional cytokine, might be implicated in the immunopathogenesis of GBS. In their study, serum IL-6 levels were increased in six (26%) of 23 GBS patients, and detectable levels of IL-6 were also found in the cerebrospinal fluid in 13 (57%).[2] Using enzyme-linked immunospot assays, Press et al.[3] found elevated numbers of IL-6-secreting blood mononuclear cells during the acute phase in patients with GBS.

Quite recently and importantly, Swart et al.[4] depicted the cascade-like fashion of events initiated by an inflammatory stimulus (lipopolysaccharides), with tumor necrosis factor-α secreted first, IL-1β second, and IL-6 last, suggesting possible pathways connecting IL-6 to vasopressin release. These pro-inflammatory cytokines are secreted into the systemic circulation to initiate the acute phase response which is involved in the innate immune system.[5] Furthermore, Mastorakos et al.[6] reported that plasma antidiuretic hormone levels were elevated after IL-6 injection in cancer patients, suggesting that IL-6 activated the magnocellular ADH-secreting neurons and that it might be involved in SIADH. Activation of the subfornical organ and the organum vasculosum of the lamina terminalis by IL-6 could eventually lead to thirst and increased vasopressin secretion by neurons from the supraoptic nucleus and paraventricular nucleus.[4] The combination of antidiuresis and increased water intake may result in hyponatremia.

Therefore, there is a possibility that IL-6 may play a central role in the pathogenesis of hyponatremia associated with GBS. However, further studies are necessary to elucidate if IL-6 crosses the blood-brain barrier (BBB), or whether lipopolysaccharides cross the BBB and then increase IL-6 locally in the brain in the future.

Conflicts of interest

The authors declare they have no potential conflicts of interest related to the contents of this article.

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Acyclovir and valacyclovir neurotoxicity in patients with renal failure

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To the Editor,

It was with great interest that we read the article by Quiñones et al[1] in which they mention how toxicity secondary to starting new treatments in patients with renal failure can give rise to false diagnoses.

One of the patients cited by the authors suffered from neurotoxicity due to acyclovir. Acyclovir and its ester, valacyclovir, are widely used in treating infection with the varicella zoster virus,