Cyclooxygenase-2 pathway inhibition: a potential avenue in anti-inflammatory therapy against the induced renal failure by scorpion venom.

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Scorpion venom is a source of low molecular mass neurotoxins that can affect human health. The inflammatory response, a key process in scorpion envenoming syndrome could be a major cause of death after scorpion envenomation. Therefore, its mechanism needs to be more investigated to develop more efficient therapies.
The present study aims to investigate the role of cyclooxygenases, especially the COX-2 pathway in the renal inflammation response after scorpion envenomation, by pretreatment of mice with inhibitor of cyclooxygenases (COX-1/ COX-2) and selective COX-2 inhibitor. The inflammatory disorders were evaluated by the measurement of vascular permeability changes and inflammatory cells infiltration and by the assessment of some oxidative/nitrosative stress markers and also by histopathological analysis.
Results revealed that scorpion venom induced significant increase in renal vascular permeability and inflammatory cells infiltration, as well as an increased nitric oxide levels concomitant with reduced antioxidant defense. Severe alterations in the renal tissue including inflammatory cells infiltration, edema and hemorrhage were observed.
The non-selective inhibition of cyclooxygenases resulted in reduction of renal vessels permeability, inflammatory cells infiltration and prevented the oxidative/nitrosative stress and the histological alterations. Our results revealed also that COX-2 inhibitor was more effective in reducing the inflammatory disorders and oxidative/nitrosative stress induced by scorpion venom in the kidney than the non-selective inhibitor of cyclooxygenases.
These data suggest the involvement of cyclooxygenase-2 pathway in the renal inflammatory injuries caused by scorpion venom. This could be taken under consideration in anti-inflammatory therapy to provide better treatment in scorpion envenomation cases.

Key-words: scorpion venom, inflammatory response, oxidative stress, cyclo-oxygenases pathway, renal tissue.

Use of biochemical markers in the early detection of bacterial meningitis.

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Bacterial meningitis is related to the invasion of the cerebrospinal fluid (CSF) by bacteria that develops. The number of cases of these bacterial meningitis is estimated at over a million a year worldwide. Bacterial meningitis in children are in all cases, a therapeutic emergency involving early suspicion of a diagnosis must be confirmed by the CSF after lumbar puncture.
Our goal is to establish the relationship between the rate of CSF glucose and bacterial presence in CSF to facilitate the confirmation of early diagnosis and provide adequate and immediate antibiotic therapy.
Methods: Twelve CSF samples obtained from hospitalized children with clinical symptoms (fever, convulsions ...) were analyzed in order to assay CSF protein concentration and CSF glucose by using enzymatic methods; and glucose.
After, analyzes were performed on the blood and CSF were obtained the following results: - Biochemical CSF shown, moderate protein level and a variable CSF / blood glucose ratio of a child for another 17% (<0.40) and 83% (> 0. 40).
These results indicate that normal CSF glucose does not exclude the diagnosis of this type of meningitis, and it could not be a reliable marker in the confirmation of a bacterial infection.

Key-words: bacterial meningitis, cerebrospinal fluid, children, CSF glucose.