

## Accuracy of Jolt Accentuation of Headache in Patients with Suspected Meningitis

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### Editorial

Infection of the central nervous system is including of various diseases. Meningitis, is an inflammation of the membranes surrounding the brain and spinal cord that is sometimes also called arachnoiditis or leptomeningitis. Encephalitis is inflammation of the brain and myelitis is inflammation of spinal cord. Bacterial meningitis is a common disease in the world and in the United States it occurs in approximately 5-10 cases per 100,000 populations. The disease is more common in men [1]. Two major causes of bacterial meningitis, is infection of *Streptococcus pneumoniae* and *Neisseria meningitidis* [2]. Meningitis is an important cause of mortality and morbidity worldwide and among the 10 fatal infectious diseases that each year approximately 135,000 of those sufferers die. It is estimated that about 25% of adults with bacterial and about one-third of people with TB meningitis die. 25% of surviving patients will have with transient or permanent neurological deficits [3]. Given that meningitis is a common disease in the emergency department, its accurate diagnosis and prompt treatment is critical. LP [Lumbar Puncture] is a good diagnostic method, but this method is relatively aggressive [4].

In about recent hundred years physicians have used three major signs: neck stiffness, kernig and brudzinski for meningitis diagnosis and deciding to do LP. The three signs can be simply done in the patient's bedside and almost all physicians and medical students are able to perform these tests. The conducted studies have shown that the sensitivity in the detection of neck stiffness for meningitis diagnosis is 30%, sensitivity of kernig is 5% and sensitivity of brudzinski is also 5%. While the survey on Jolt Accentuation of Headache has identified that sensitivity is about 97%. Despite the low sensitivity of the tests neck stiffness, kernig and brudzinski their use in the diagnosis of meningitis is recommended [3].

Jolt Accentuation of Headache test first time was described by Uchihara T and Tsukagoshi H in 1991. Patient with suspected meningitis is asked to spin his head horizontally with a speed of 2-3 times per second, at this stage, the patient's intensified headache, indicating that the test is positive. Their study has reported the sensitivity of this test is 97% and its specificity is 60% [5].

In some studies, the accuracy of these tests indicated that these tests cannot be used for approve or reject meningitis and all patients with suspected meningitis must do LP. In one of these studies, the

sensitivity Jolt Accentuation of Headache have been reported 63.9% and its specificity of the 43.2% have been reported [3,4]. In another study conducted on Jolt Accentuation of Headache 100% sensitivity and specificity of 71.5% has been calculated and it is recommended that in patients with suspected meningitis will be utilized as an alternative examination of neck stiffness [6]. In another study, the sensitivity of this test has been reported 21% and its specificity has been reported 82% in the diagnosis of cerebrospinal fluid pleocytosis in children with meningitis. Due to the sensitivity and specificity of these tests, it is concluded that these tests cannot be used as a predictor of the presence of pleocytosis in the cerebrospinal fluid accurately [7].

According to studies conducted on test Jolt Accentuation of Headache, it is showed that conflicting results regarding the sensitivity and specificity of this test in patients with suspected meningitis is observed and in some studies it has been suggested and in some other, the use of this method as prognostic factors for meningitis has been rejected. Therefore, further studies on the diagnostic accuracy of this test should be performed in patients with meningitis to determine whether the results of this test in the diagnosis of meningitis can be confident or have low test accuracy and its use is not recommended.

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