

**Validation of an alternative concentration technique in direct microscopy of CSF for microbiological diagnosis.**

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Objectives of the study are to compare stained smear results after non centrifugation concentration and routine centrifugation concentration . To compare the test smear results with the gold standard culture. To validate the stained smear after non centrifugation concentration technique as a presumptive diagnostic test by comparing with the gold standard of culture positives. Determine the reliability of reading the stained smear after concentration by the test method . To validate the stained smear after non centrifugation concentration technique as a presumptive diagnostic rest by comparing with the clinical and laboratory criteria for diagnosis. This study is a validation study. It consisted of 112 Cerebro Spinal Fluid (CSF) samples received within July to October the unit of Microbiology General Hospital Matara. Hundred and twelve direct smears of CSF prepared by non centrifugation compared with routine smears prepared by high Speed centrifugation and validated against gold standard culture. Gold standard culture positivity was very low in this study. Therefore analysis were carried out against a relative standard built out of clinical and biochemical criteria and results were as Follows. The test smears sensitivity 80.00 percent, specificity 72.97 percent, false positive rate 27.03 percent and false negative rate 20.00 percent.(p value 0.00000151) repeat test smear sensitivity 73.33 percent, specificity 89.19 percent, false positive rate 10.81 percent and false negative rate 26.67 percent.(p. value 0.00000001) Routine smear readings gave sensitivity of 38.10 percent, specificity 91.43 percent, false positive rate 8.57 percent and false negative rate 61.90 percent. (p. value 0.00277006) The agreement between two test smears was fair. (KAPPA agreement) According to the results obtained, tested direct smear is a valid technique to perform on CSF samples as a presumptive diagnostic test.