# SUMMARY AND CONCLUSION

This study consists of 64 infants and children diagnosed as acute meningitis, in addition to 20 control cases, admitted to the Pediatric Department in Alexandria Fever Hospital from November 1998 through July 1999.

The diagnosis was confirmed by lumbar puncture, and the different methods of examining the obtained CSF. The 64 cases were divided into three groups; group I: bacterial meningitis, group II: presumed bacterial meningitis, and group III: non-bacterial meningitis.

The mean age was $5.09 \pm 3.73$, with a male to female ratio of 1.5:1. The most common mode of presentation was neck rigidity, which occurred in 57 patients (89%). While fever was detected in 54 patients (84.4%), sensorial changes occurred in 49 patients (76.5%), Kernig's sign was detected in 46 patients (71.8%), vomiting occurred in 45 patients (70.3%), Brudziniski's sign in 39

group I. The commonest isolated bacteria were Neisseria meningitides, which was isolated in 15 patients (37.5%), followed by Hemophilus Influenza (Hib) isolated in 10 patients (25%), Streptococcus pneumoniae isolated in 9 patients (22.5%).

Combur9 test was used to examine the CSF samples obtained from all of the studied patients to determine the CSF content of glucose, proteins, and leukocytes. Combur9 correctly identified meningitis in all patients (64 patients, three groups) with the strip method (sensitivity 100%). None of the normal CSF was misdiagnosed with the strip method (specificity 100%).

No false-positive nor false-negative cases were identified by the strip test (PPV=100%, NPV=100%).

Biochemical studies were performed for all the CSF samples obtained from all the studied patients, to estimate its glucose and proteins content. Cytological studies were performed for all the CSF samples obtained from all the studied patients, to estimate its total and leukocytic counts. The mean differences were highly significant between all groups.

The relation between the combur9 test and laboratory values

with PMNL predominance.

Validation parameters of LET in the diagnosis of CSF PMNL, leukocytosis, and bacterial meningitis showed, sensitivity, and specificity of 98%, 100% respectively. The PPV, and NPV were 100%, 93.3%, respectively. Validation parameters of LET in the diagnosis of CSF acute bacterial and presumed bacterial meningitis showed, sensitivity, and specificity of 100%, 93.75% respectively. The PPV, and NPV were 97.95%, 100% respectively.

## Conclusion:

Combur 9 reagent strips offers a clinically useful and rapid screening method for the qualitative determination of CSF glucose, proteins and leukocytes. The advantages include the ease of performance, and the ready availability.

Leukocyte esterase test is efficient as a quick screen for bacterial meningitis. It is reliable not only for the detection of CSF PMN leukocytosis, but also for the differentiation between cases with bacterial or presumed bacterial meningitis, from those with