Comparative Study on the Use of the Widal Test for Stool Culture in the Laboratory Diagnosis of Typhoid Fever in Holy Family Hospital Akum, North West Region of Cameroon

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Abstract:

Background:

Typhoid fever has several diagnostic tests. However, misdiagnosis is common since most health care facilities use only the Widal test without confirmation of results with a second test method.

Objective:

This study aimed at evaluating the performance of Widal test to culture stool in the Laboratory diagnosis of typhoid fever.

Methods:

Recruited in this study were 112 consented patients ≥1 year presenting with symptoms clinically suspected of typhoid fever visiting the Hospital in April, 2018. Blood and stool

samples collected from all participants were subjected to Widal and stool culture, respectively. Serotyping was done using Salmonella O, and H antisera. Widal agglutination titre values ≥1:80 were considered as positive for the Salmonella antigen. Isolation of S. typhi from stool culture indicated an infection. Data was analysed using the Statistical Package for Social Sciences (SPSS). Sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV) of Widal test were calculated. The sensitivity and specificity of the stool culture were 100% since it was the ideal to which the Widal test was compared.

Results:

Prevalence of typhoid fever using stool culture was 39.3%, sensitivity and specificity of Widal were 40.9% and 32.4%, respectively. NPV and PPV were 6.44% and 28.13%, respectively.

Conclusion:

The Widal test is not reliable for diagnosis of typhoid fever. Health care personnel should develop a rapid, highly sensitive and cheap diagnostic method that is also capable of differentiating Salmonella infection from other infections.

Keywords: Negative predictive value, Positive predictive value, Sensitivity, Specificity, Stool culture, Typhoid fever, Widal slide agglutination test.

Recent Publications

1. **Wam E.C.**, Arrey C.N., Sama L.F., Agyingi L.A., Wam A.N. (2019). Comparative Study on the Use of the Widal Test for Stool Culture in the Laboratory Diagnosis of Typhoid Fever in Holy Family Hospital Akum, North West Region of Cameroon . *The Open Microbiology Journal*. 13:73-80 DOI: 10.2174/1874285801913010073.
2. Noubom M., Tseyep D.G.K., Sama L.F., **Wam E.C.**, Sadjeu S., Kenfack B., Siewe E., Donfack H., and Tume C.B. (2018). Seroprevalence of rubella IgM and IgG antibodies and associated risk factors among pregnant women Attending Antenatal Clinic at Bafoussam Regional Hospital, West Region of Cameroon. *Journal of Tropical Diseases* 6: 279. doi:10.4172/2329-891X.1000279
3. Mboh E.A., Noubom M., Sama L.F., **Wam E.C.,** Panni A.P., Mouladje M., Mouliom N.R., Tume C.B. (2018). Pattern of Lipid Profile of Type 2 Diabetes Patients in Tertiary Hospital South-West Region of Cameroon. *Journal of Diabetes & Metabolism*, 9(5): 795

4. Sama L.F., Ali I.M., Noubom M., Djinou O.I.N., **Wam E.C.,** Bamou R., Kuiate J., and Tume C.B. (2017). Liver Dysfunction in TB-Diabetic and TB Non-Diabetic Patients Admitted in TB Referral Hospital in Western Cameroon. *Biochemistry and analytical Biochemistry.*, 6: 333. Doi: 10.4172/2161-1009.1000333
5. Sama L.F., Djinou O.I.N., **Wam E.C.,** Bamou R., Ali I.M., Noubom M., and Tume C.B. (2017). Sero-prevalence of Hepatitis B and C virus and High Risk of Hepatotoxicity among TB/HIV Positive and HIV Negative Population in Western Cameroon. *Global Journal of Infectious Diseases and Clinical Research.*, 3(1): 001-008.
6. **Wam E.C.,** Sama L.F., Ali I.M., Ebile W.A., Aghangu L.A., and Tume C.B. (2016). Seroprevalence of Toxoplasma gondii IgG and IgM antibodies and associated risk factors in women of child-bearing age in Njinikom, NW Cameroon. *BMC Research Notes*. DOI 10.1186/s13104-016-2206-0.

Photograph



Biography (150 word limit)

Wam Elvis Chongsi is involved in active research since 2012. He did M.Sc. in Clinical Biochemistry in the University of Dschang – Cameroon, where he has been doing PhD since 2015. He equally holds a higher teacher diploma known by a French appellation PLEG, in Biology, which qualifies him as a certified Biology Teacher in Cameroonian English Secondary Schools. So far, he has featured in 6 publications, being first author in 2. Two other articles are under review in 2 different journals one of which he is the first author. His research interest is currently on infectious diseases in general, cutting through the fields of molecular biology, immunology and microbiology. He has never had an opportunity to travel out of Cameroon to share ideas with other researchers round the world in person.

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