Modified tube agglutination method for determining significant antibody titre to *Salmonella spp.* in an endemic area

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Enteric fever is caused by antigenic variant group of bacteria known as *Salmonella* species. The disease is common in most developing countries, being contacted through contaminated water, food and poor personal hygiene. The most significant challenge in the treatment of infected patients is misdiagnosis leading to high morbidity and mortality rate. A time efficient technique which has been compared with tube agglutination method and culture and found to be very efficient, reliable, highly sensitive and specific was devised. Blood samples were collected from patients suspected of having enteric fever and a 1:4 dilution of the serum in saline was used for direct slide agglutination test. Samples with visible agglutination were considered as significant and it compared favourably with tube agglutination and culture results. Blood samples of the patients were collected into plain tubes and allowed to clot and retract and the serum was extracted. Stool samples were also collected and cultures on deoxycholate citrate agar, Salmonella-Shigella agar and xylose lactose deficient agar. The colonies isolated after 24 hours of incubation were identified and characterized. The serum was used to perform tube agglutination test. A 1:4 dilution of the serum was made in normal saline and used to perform a slide agglutination test. The results from these three methods were compared. A total of 1143 (69.48%), 1204 (73.19%), and 1107(62.29%) were obtained as positive results for the modified saline dilution method for tube agglutination, culture and tube agglutination methods respectively. The modified method is highly efficient and reliable, having a sensitivity of 94.93% and a specificity of 86.85%. It is recommended that this modified saline dilution technique be used as a screening method which can eliminate time wastage and enhance patient treatment in a poor resource setting.

Biography
Moses Nnaemeka Alo studied Microbiology (BSc) from University of Lagos, Nigeria. He went further to study Medical Immunology in Master’s Degree (MSc) from Ebonyi State University, Nigeria and also obtained a PhD in Medical Microbiology from Ebonyi State University, Nigeria. He also has a professional qualification in Medical Microbiology registrable with Medical Registration Council of Nigeria. His research areas include infectious diseases, public health, immunology and medical bacteriology and virology. He has been the Head of Department of Medical Laboratory Science from 2007-2011 at Ebonyi State University, Nigeria, member Medical Laboratory Science of Nigeria, and currently the program coordinator Microbiology in Federal University Ndufu-Alike Ikwo, Nigeria. He is involved in various researches both at undergraduate and postgraduate level. He is currently a research coordinator in Microbiology and Epidemiology of Water Borne Infectious Disease in Federal University Ndufu-Alike Ikwo, Nigeria. He has over 50 publications to his credit.

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