



Diagnostic Role of Typhidot in the Diagnosis of Typhoid Fever.

Mahmooda Tasneem¹, and Adeel Munawar²

¹Women Medical Officer,

RHC Renala Khurd

Email: mohydchaudhary12@gmail.com

Ph. # 0317-4475875

²Medical Officer,

THQ Hospital Kot Chutta D.G.Khan,

Email: adeelmunawarchishti@gmail.com

Ph. # 0333-8593002

Abstract:

Objective: The main aim of this study was to find the efficacy and diagnostic value of typhidot for diagnosing the typhoid fever.

Place and Duration of study: This study was carried out in a duration of one year from December 2017 to November 2018 in Jinnah Hospital Lahore.

Materials and Methods: The patients presenting in the GI clinic of Jinnah Hospital Lahore were considered for the study. Males and females of all the ages were taken into consideration regardless of their gender. Patients were selected on the basis of history and clinical examination and later on tests were performed to confirm the diagnosis. The patients who had high grade step ladder fever as well as diarrhea were considered for the study. On 4th day typhidot was performed on all the patients and later on blood culture was done. True positive were the patients in which both typhidot and blood culture was positive and false positive were the patients in which typhidot was positive but blood culture was negative. The best diagnostic test for typhoid is blood culture but it is expensive and time consuming due to which it cannot be relied upon. Hence a cheap test is needed and most of the physicians opt for typhidot which is neither sensitive nor specific for typhoid. This study was done to find out the reliability of typhidot for diagnosing the typhoid fever. Informed consent was taken from all the patients or their relatives. Ethical committee approval was taken.

Results: Our study included 70 patients and 32 patients among these were found positive according to typhidot and among these positive blood culture was seen in 16 (50%) of the patients while negative blood culture was seen in 16 (50%) of the patients. 38 remaining patients were negative for the typhidot and even among those positive blood culture was seen in 23 (60.52%) of the patients while 15 (39.48%) of the patients had negative blood culture.

Keywords: Blood culture, Typhoid, Typhoid fever.

Introduction: Rod shaped, gram negative bacillus *Salmonella paratyphi* and *Salmonella Typhi* are responsible for causing the typhoid fever. They do not form spores, are mobile due to the presence of flagella all over the body, ranges from 2-5µm and have a diameter of 0.7 to 1.5µm. They are both

aerobic and anaerobic bacteria which can produce ATP either in the presence or absence of oxygen. These bacteria produce toxins which affects the GI mucosa and cause enteric fever.

Blood culture is mainly used for diagnosing typhoid fever. *Salmonella* produce hydrogen peroxide which can be detected by certain mediums which have ferrous sulphate. *Salmonella* species can also be detected by the use of polymerase chain reaction by using bacteria DNA. Ultraviolet light and heat can destroy the bacteria and their spores. Reptile handlers are more likely to get infected because the bacteria are present on the skin of reptiles. Feces of animals going into water can also be the source of infection along with infected food. For diagnosing the typhoid fever, typhidot can be helpful. This study was performed to look the sensitivity and specificity of typhidot for diagnosing the typhoid fever. In typhidot IgM and IgG located on the outer membrane are detected. After the patient has been infected with *Salmonella*, typhidot becomes positive after 2 to 3 days. But being less sensitive and specific it has some limitations.

Materials and Methods: The patients presenting in the GI clinic of Jinnah Hospital Lahore were considered for the study. Males and females of all the ages were taken into consideration regardless of their gender. Patients were selected on the basis of history and clinical examination and later on tests were performed to confirm the diagnosis. The patients who had high grade step ladder fever as well as diarrhea were considered for the study. On 4th day typhidot was performed on all the patients and later on blood culture was done. True positive were the patients in which both typhidot and blood culture was positive and false positive were the patients in which typhidot was positive but blood culture was negative. The best diagnostic test for typhoid is blood culture but it is expensive and time consuming due to which it cannot be relied upon. Hence a cheap test is needed and most of the physicians opt for typhidot which is neither



sensitive nor specific for typhoid. This study was done to find out the reliability of typhidot for diagnosing the typhoid fever. Informed consent was taken from all the patients or their relatives. Ethical committee approval was taken.

Results: Our study included 70 patients and 32 patients among these were found positive according to typhidot and among these positive blood culture was seen in 16 (50%) of the patients while negative blood culture was seen in 16 (50%) of the patients. 38 remaining patients were negative for the typhidot and even among those positive blood culture was seen in 23 (60.52%) of the patients while 15 (39.48%) of the patients had negative blood culture.

Discussion: In a study carried out in Karachi revealed specificity of typhidot 61.5% while sensitivity of 26.7% which is comparable to our study showing sensitivity 35% while specificity of 56% of typhidot. 67% sensitivity and 54% specificity was seen shown in a study carried out in Bangladesh. Because it has low sensitivity and specificity as well so typhidot should not be considered as a gold standard for diagnosing the typhoid fever. Clinical correlation should be used for diagnosing typhoid fever along with tests and prophylactic antibiotics should be started without waiting for blood culture reports. World health organization has set blood culture as gold standard for diagnosing typhoid fever and typhidot is just a guide for initial diagnosis.

References:

- Boyle, E., Bishop, J., Grassl, G. and Finlay, B. (2006). Salmonella: from Pathogenesis to Therapeutics. *Journal of Bacteriology*, 189(5), pp.1489-1495.
- Crum-Cianflone, N. (2008). Salmonellosis and the gastrointestinal tract: More than just peanut butter. *Current Gastroenterology Reports*, 10(4), pp.424-431.
- Mehmood, K., Sundus, A., Naqvi, I., Ibrahim, M., Siddique, O. and Ibrahim, N. (2015). TYPHIDOT -A BLESSING OR A MENACE. *Pakistan Journal of Medical Sciences*, 31(2).
- Bhutta ZA. Current concepts in the diagnosis and treatment of typhoid fever. *BMJ*. 2006;333:78– 82.[PMC free article] [PubMed] [Google Scholar 5. Background document: The diagnosis, treatment and prevention of typhoid fever. Geneva: WHO;2003.