

## EVALUATION OF *SALMONELLA TYPHI* SERUM ANTIBODY TITER AND ASSESSMENT OF ITS RELATION WITH CERTAIN SOCIO-EPIDEMIOLOGICAL PARAMETERS IN AL-AZZIZIYA, WASIT GOVERNORATE

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**ABSTRACT :** The present study aimed evaluate serum antibody titer of *Salmonella typhi* in a sample of Iraqi patients and asses its relation with certain socio-epidemiological parameters, This is a prospective study comprised of Seventy-three patients, selected from those attending Al-Azzizyia hospital and Al-Zubaidyia medical center and twenty seven opposite healthy, checked subjects as control. Patients were selected between October 2017 and mars 2018. Five ml blood was collected from each subject into 5ml plain tube, 3 ml blood were allowed to clot and separated by centrifuge, and the resultant serum was used for Widal test and CRP testing. Serum samples were tested using commercial widal kit. The results showed that high *Salmonella typhi* infection was found in male patients compared to females (37.5%, 25.6%,  $P > 0.05$ ). *Salmonella typhi* infection reached the highest level in young age patients (25-45years) compared to other groups (28.0%, 40.5%, 25%,  $p < 0.005$ ), and poor patients compared to patients with good and moderate income, though non-significant. Significantly low infection rate was found in patients with good personal hygiene, and significantly high number of infections in those patients with the lowest number of rooms/ participants' houses. In conclusion, we found that typhoid fever is like other infectious diseases still influenced greatly by personal hygiene and home crowdedness.

**Key words :** Typhoid fever, serum, widal test, personal hygiene, home crowdedness.

### INTRODUCTION

*Salmonella typhi* and *Salmonella paratyphi* are human-adapted pathogens that cause enteric fever (Pegues and Miller, 2010). The disease burden worldwide is estimated at over 20 million cases per year, with more than 200 000 deaths (Mintz, 2009; Crump and Mintz, 2010). A significant proportion of this burden is carried by children and young adults who are non-immune (Bhutta and Threlfall, 2009). In addition, the disease is an important public health problem in different part of the world especially in developing countries, in which the disease is endemic (Jawad *et al*, 2006). The disease is unique to human, it is characterized by malaise, fever, abdominal discomfort, transient rash, splenomegaly, hepatomegaly, bradycardia and leucopenia, the most prominent major complications are intestinal hemorrhage, and perforation (Ghenghesh *et al*, 2009). Strains of *Salmonella* are categorized as typhoidal and non-typhoidal, corresponding to the disease syndrome with which they are associated. Strains of non-typhoidal *Salmonella* usually cause intestinal infections

(accompanied by diarrhea, fever, and abdominal cramps) that often last 1 week or longer (Hohmann, 2001). Less commonly, non-typhoidal *Salmonella* can cause extra-intestinal infections (*e.g.*, bacteremia, urinary tract infection, or osteomyelitis), especially in immunocompromised persons. Persons of all ages are affected, but the incidence is highest in infants and young children. *Salmonella* is abundant in animal populations, and human illness is usually linked to foods. Salmonellosis is also transmitted by direct contact with animals, by water and occasionally by human contact (Scallan *et al*, 2011). The O and H antigens are the major antigens used to serotype the *Salmonella*. The O antigens are Similar to the O antigens of other Enterobacteriaceae, but H antigens are different in that they are diphasic (Zwadyk *et al*, 1992). Clinical management was complicated by the increase in recent years of antibiotic resistance among strains of *Salmonella typhi*, a development that threatens to devastate the diagnostic and surveillance capabilities of many health systems in developing countries (Mermin