

# Letters to the Editor

## Salmonella food poisoning in Najran

Sir,

With the advent of sophisticated equipment for food processing and food storage, food poisoning is relatively rare in most developed countries. However, in developing countries where the modern technology is not available to ordinary, everyday people, food poisoning continues to claim its toll.<sup>1</sup> The Kingdom of Saudi Arabia is one of the developing countries where such facilities of food storage and food hygiene are commonly available and probably one of the best. Food poisoning is relatively rare in this country except some occasional incidents during the annual Muslim pilgrimage to Mecca called Hajj.<sup>2</sup> However we witnessed an outbreak of food poisoning in this southern province of the Kingdom of Saudi Arabia called Najran, on 29/05/1421-01/06/1421 H, (28-30 August 2000). All our patients had a history of taking a particular variety of sandwich from one famous restaurant between 9 pm on 27th of August to 4 am on 28th of August 2000. A total of 57 cases were confirmed to have *Salmonella Enteritidis* group D food poisoning. Out of these, 44 cases were admitted to Najran General Hospital. All our patients had a history of taking the suspected food. All presented with a history of loose motions and abdominal cramps. Stool/rectal swabs were collected from all patients. The stool/rectal swab samples were inoculated into Selenite F enrichment broth and sub-cultured onto XLD medium (Oxoid, United Kingdom). The colony was identified as *Salmonella* by using API 20E identification system for Enterobacteriaceae and Gram negative rods (bioMerieux Vitek, United States of America (USA)). Using *Salmonella* O antisera (SA Scientific, Inc, USA) the isolate was further identified as *Salmonella enteritidis*, serogroup D. Blood culture was carried out in those patients who had leucocytosis or otherwise looked sick. All patients were given intravenous fluids. Patients were kept in the hospital until they stopped the loose motions or became afebrile. We present the data below of 44 patients admitted to Department of Medicine (Table 1). The first instance of salmonella food poisoning was recorded by Gaertner from Germany 1888 when he isolated *Salmonella enteritidis* from the meat of an emergency slaughtered cow and from the cadaver of a fatal case of food poisoning caused by its meat. In 1898,

Table 1 - Data of salmonella enteritidis food poisoning patients from Najran, Kingdom of Saudi Arabia.

Clinical variable	Observations
Number of patients	Males - 21 Females - 23 Total - 44
Age range	13-50 Years
Age distribution	13-20 Years - 23 21-30 Years - 12 31-40 Years - 6 41-50 Years - 3
Nationality	Saudis - 42, non Saudis - 2
Presenting symptoms	Loose motions - 100% Vomiting - 95% Abdominal pain - 100% Fever - 91%
Duration of stay in hospital	2-5 days (range)
Mean duration of stay	2.5 days
Positive stool culture	100%
Positive blood culture	None
Additional disease found	Anemia - 4 patients Diabetes mellitus - 2 patients
Common laboratory finding	Leucocytosis
Mortality	None

Durham in England and de Noble in Belgium isolated *Salmonella typhimurium* (*S.typhimurium*) from meat and food poisoning cases.<sup>3</sup> A very large number of salmonella species have been isolated since then but *S. typhimurium* was the most common. However, *Salmonella enteritidis* showed an increase in the USA starting 1976 through to 1986, so much so that by 1992 it was the most common salmonella serovar in the USA as well as in Europe. In 1994, *Salmonella enteritidis* was responsible for 26% of non-typhoidal salmonellosis followed by *s.typhimurium* (22%).<sup>4</sup> In the Kingdom of Saudi Arabia some studies have shown *Salmonella enteritidis* to be the most common salmonella infection in local Saudis.<sup>5</sup> In fact, *Salmonella enteritidis* is more commonly a disease of well off nations because viable salmonella easily enters the intact eggshell and is easily transported by dried or

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frozen foods. The most common source of salmonella food poisoning is poultry, meat, milk, cream and eggs. Food contamination can also occur from droppings of rats, lizards or other small animals. Human carriers do occur, but their role in spreading the infection is minimal. Cross infection may occur in the hospital without food poisoning. Isolation of the organism from the patients stool or rectal swab and isolation from food suspected, establishes the diagnosis in the proper clinical setting. In our patients, *salmonella enteritidis* (serogroup D) was cultured from the stool of all the patients, and exactly the same organism was also cultured from salad and mayonnaise used in the restaurant. Two of the workers in this restaurant also were found to have the same organism in their stool but they were asymptomatic. The majority of our patients were young boys and girls. Possible reasons is that this age group more commonly enjoys fast food from restaurants. Two of our patients were diabetic and 2 were pregnant females. No complications were noted in these patients. Four of our patients were found to have microcytic, hypochromic anemia which was ascribed to menorrhagia in these teenage girls. All were discharged fit and were advised to follow-up after 6 weeks for a repeat culture to document clearance of organism. Most of the time the salmonella infection is mild and is not diagnosed. Oral fluids may be sufficient in these patients without any antibiotics. However a more severe infection may cause severe dehydration. Patients may need to be hospitalized and resuscitated by intravenous fluids. Antibiotics are not indicated in salmonella gastroenteritis

because it is considered to increase the carriage rate without improving the acute disease, which is self limiting. Patients with an immuno compromised state need antibiotics according to sensitivity tests. Quinolone antibiotics will be a good choice for long term carriers. Enteric precautions should be taken while patients are hospitalized. Hand washing is strongly recommended.

**Latif A. Khan**  
**Sarosh A. Khan**  
**Venugopal Jayapal**  
**Habeebullah Shah**  
Najran General Hospital  
PO Box 5073  
Najran  
Kingdom of Saudi Arabia

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