

# FOOD POISONING DUE TO SALMONELLA SEROVAR INFANTIS

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## ABSTRACT

*Salmonella* serovar Infantis was recovered from stool samples of patients admitted with fever and diarrhoea, after a marriage feast. The same strain was also isolated from the pineapple pudding consumed at the feast. This pudding was inadequately cooked and stored at room temperature for about 18-24 hrs before being served. It also contained eggs which is the most common source of non-typhoid salmonellosis. (J Acad Clin Microbiol 2002; 4 (1): 23-25).

**Key words:** *Salmonella* ser. Infantis, food-poisoning.

## INTRODUCTION

Salmonellosis is usually food-borne, poultry and eggs, being the most common source of infection. In developing countries, severe gastroenteritis accompanied by septicaemia, with upto 30% mortality occurs due to *Salmonella* food-poisoning. *Salmonella* ser. Enteritidis is the most common cause. Here we report an outbreak of food-poisoning due to *Salmonella* serovar Infantis at a wedding feast. *Salmonella enterica* ssp. Enterica serotype Infantis (6,7,14:r:1,5) features regularly in the top 10 prevalent serotypes isolated from humans in many developed countries. Its primary reservoir is poultry. Resistance to antibiotics is rare.<sup>1</sup>

## CASE REPORT

After a marriage feast, 65 people were admitted at the Medical College Hospital, Thiruvananthapuram, Kerala, India, with fever, diarrhoea and abdominal pain on 14<sup>th</sup> April 2001. They had consumed the food, the previous evening and the symptoms developed after 12-16 hrs. Samples of motion from seven severely ill patients were received at the microbiology laboratory. Leftover food, which included idiappam (rice cakes), peas curry and pineapple pudding were also brought to the lab for investigation. On taking a detailed history from the patients, it was found that the most likely source was the pineapple pudding, since even those who had eaten only the pudding had also developed the symptoms. Meanwhile one patient went into renal failure and died the next day. Hence, parenteral Ciprofloxacin was started empirically for all the septicaemic patients.

Food materials were inoculated into enrichment medium and subcultured the next day. The motion samples were all plated on Blood agar and MacConkey agar. They were also inoculated into enrichment medium. Of the seven motion samples, three yielded heavy growth of non-lactose fermenting colonies (NLF) after enrichment. The pudding samples also yielded heavy growth of nonlactose fermenting colonies after enrichment. The other food samples did not yield any significant growth. Cultures for *Staphylococcus aureus* on Salt agar and *Vibrio* on Bile Salt Agar were negative. The NLF colonies were identified as *Salmonella* biochemically, since they were citrate positive, produced gas and hydrogen sulphide and were indole negative. On serotyping, they agglutinated with *Salmonella* antisera for serogroup C<sub>1</sub> (O 6,7). Their sensitivity patterns were also similar, being sensitive to Ciprofloxacin, Chloramphenicol and Ceftriaxone, but resistant to Ampicillin, Co-trimoxazole and Nalidixic acid.

The isolate was sent to the National Institute of *Salmonella* and *Escherichia* Centre, Research and Development Division, Kasauli. It was identified as *Salmonella* ser. Infantis. Ciprofloxacin treatment was continued and the rest of the patients recovered within 2-3 days.

## DISCUSSION

As per data supplied by the Public Health Laboratory Service, UK, in the years 1988, 1989 and 1990, Infantis was the 4<sup>th</sup> or 5<sup>th</sup> most common cause of gastroenteritis in the UK.<sup>2</sup> The National Institute of Cholera and Enteric Diseases, Kolkata reports that in acute diarrhoea cases due to non-typhoid *Salmonella*, admitted in the Infectious Diseases Hospital there, the major serotype was Infantis.<sup>3</sup> Infantis has been isolated from several outbreaks of food-poisoning, worldwide. Sources that have been traced include factory processed rice-dressing mix contaminated from a pump in the production line,<sup>4</sup> potato salad eaten at a fair,<sup>5</sup> turkey eaten by inmates of a prison,<sup>6</sup> egg sandwiches on an airline<sup>7</sup> and chicken pieces at a picnic,<sup>8</sup> traced to contaminated chicken feed at a farm.

In outbreaks reported to the CDC, Atlanta, the most common error is storage of food at inappropriate temperatures. Bacterial pathogens grow in food at temperatures ranging from 40° F to 140° F.<sup>9</sup> A study in Germany, where artificially contaminated fish was kept refrigerated and unrefrigerated, showed that refrigeration upto 8 hrs prevented detectable contamination of the fish.<sup>10</sup> In case of the egg sandwiches mentioned above, a carrier was detected and this was coupled with shortcomings in the cold storage facilities.<sup>7</sup> In the outbreak reported here, the pudding which contained egg was not cooked adequately. It was then left at room temperature (about 27-34°C) overnight and served only for dinner at night, the next day. Growth may have been prevented if the pudding had been adequately refrigerated.

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