VIBRIO PARAHAEMOLYTICUS FOOD POISONING

A Case Report

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A young seaman was admitted to the Isolation Hospital with P.U.O. and vomiting. A specimen of faeces was sent to the Bacteriology Laboratory, for culture and sensitivity and to exclude cholera. The specimen was inoculated onto MacConkey, Salmonella Shigella medium and Alkaline Peptone Water at pH 9 as an enrichment medium for vibrios.

The alkaline peptone water was subcultured after 6 hours onto TCBS (thiosulphate citrate bilesalt, sucrose) agar medium and on the following day a pure culture of green colonies i.e. characteristically non-sucrose fermenters, was cultivated. Other tests showed that the micro organism was a motile Grem negative rod, oxidase positive and fermentative, and did not react with Poly O subgroup 1 antiserum for Vibro cholerae. Subsequently the microirganism was cultivated on 8% NaC1 peptone water to exclude other marine vibrios.

Discussion

Vibrio parahaemolyticus is an obligate halophile with a high alkaline tolerance, typically found in estuaries at temperatures of 20 to 45°C and commonly infecting shell fish, crabs, squids, etc. It is responsible for outbreaks of summer diarrhoea in South East Asia, Europe, and around Coasts of Cornwall, but particularly, in Japan, because of take-away meal shops, the short generation time of 10 minutes, the alkaline dishes and raw fish dishes served, and the asymptomatic carriers among food handlers.

It is entero-pathogenic not because of an exotoxin but by epithelial invasion like the shigellas. The infective dose is 10^6 to 10^9. The pathogenicity test or Karagwa test is haemolysis of fresh blood by Vibrio parahaemolyticus but this latter test is not very reliable.

Differential Diagnosis

1. Frim cholera vibrios by sucrose fermentation — Vibrio cholerae (classical and El Tor) producing yellow colonies on TCBS being sucrose positive, and Vibrio para-haemolyticus producing characteristic green colonies being sucrise negative.

2. From Vibrio alginolyticus (a) by sucrose fermentation, vibrio alginolyticus being sucrose positive and therefore giving yellow colonies; (b) by growth on 10% NaC1 as parahaemolyticus does not grow and (c) by the V.P. test — parahaemolyticus being V.P. negative.

3. From other marine vibrios by growth on 8% Sodium Chloride peptone water as the other marine vibrios are usually negative.

Conclusion

Relatively recently it has been realised that vibrio parahaemolyticus is an important cause of food poisoning. Its isolation does not present any difficulties but depends solely on the awareness of the microbiologist about its possibility as a cause of food poisoning.

References

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