

Campylobacter

Campylobacter is the commonest cause of diarrhoea in Britain.

The disease

After the bacteria have been swallowed they multiply in the gut and after about 3 days symptoms develop. These usually take the form of abdominal cramps, profuse diarrhoea and sometimes vomiting and fever. The patients usually recover without treatment in a few days. The illness is a most unpleasant one but it is rarely fatal even in babies or old people. There is an effective antibiotic treatment for complicated or unusually severe cases. The precise diagnosis is made by growing and identifying the bacteria in the laboratory.

How are campylobacters spread?

Campylobacters can be found in the intestinal tracts of wild birds and various other animals including pets. Poultry, especially broiler chickens, may carry large numbers of these bacteria without showing any signs of illness and they constitute a major source of human infection in food. Infection can also result from drinking untreated water or milk, or from direct contact with infected animals such as puppies with diarrhoea. In some parts of the country, people have become infected as a result of drinking pasteurised milk

contaminated by magpies or jackdaws pecking through the foil tops of exposed milk bottles. Although the faeces of people suffering from the disease are infective, person to person spread is uncommon.

Campylobacters in food

Any raw meat, especially offal, may be contaminated with campylobacters, but poultry constitute the most prolific source; campylobacters can be found in a large number of raw broiler chickens sold in shops and supermarkets. However, the bacteria are delicate and die if exposed to air for any length of time and they are destroyed by cooking. Although they may be present in food, unlike the salmonellas, they do not multiply in food, so they seldom cause explosive outbreaks of food poisoning. On the other hand the number of bacteria that must be swallowed to produce an illness is very small and it only needs a few transferred, say, from an uncooked chicken to a piece of bread to cause infection.

The size of the problem

Since the laboratory surveillance of campylobacter infection in England and Wales began 15 years ago, there has been a significant rise in the number of cases reported annually from 6,300 in 1978 to over 50,000 in 1999. Much of the increase is due to better detection and reporting.

However, laboratory reports represent only those patients who go to their doctors and have specimens taken for analysis. The true incidence of campylobacter infection is much higher. A survey in the South of England in 1979 indicated that more than one percent of the population, that is about 500,000 people in England and Wales was infected annually. About 3000 patients are admitted to hospital each year because of the disease and it has been estimated that the cost of lost productive output and health care for the number of cases reported is many millions.

Prevention

Campylobacters are so widely distributed in nature that there is no prospect of reducing the reservoir of bacteria. Instead efforts must be concentrated on the prevention of transmission to man, particularly in water, milk and food.

Water: Wild and domestic animals shed campylobacters into lakes, rivers, streams and reservoirs, and so all water for human consumption must be properly treated. Faults in municipal water supplies have caused outbreaks affecting up to 3,000 people in the USA and Sweden. In Britain defective storage tanks have caused outbreaks affecting up to 250 people.

Milk: Milk from dairy animals carrying campylobacters easily becomes contaminated with them. Milk that is not pasteurised or otherwise heat treated may contain campylobacters. The sale of raw milk to the public has been prohibited in Scotland since 1984 and this has virtually eliminated milk-borne campylobacter (and salmonella) infection. Yet it is still legal in England and Wales and outbreaks of milk-borne campylobacter infection continue to occur. The largest outbreak of milk-borne campylobacter infection in England and Wales affected some 2,500 children in the Luton and Dunstable area in 1979; the milk was said to have been pasteurised, but there had probably been a failure of procedure.

Food: If all raw meat and animal products were handled correctly there would be little risk of infection from them. Much can be achieved by good kitchen hygiene. In particular raw poultry and other types of meat should be kept separate from other food and adequately cooked. This would also reduce the risk of salmonella infection. The production of campylobacter free chickens would greatly reduce the number of human infections. This would require the control of infection in broiler flocks and the reduction of the cross contamination that occurs during the mechanised processing of carcasses. As broiler flocks become infected from extraneous sources (eggs are not infected and chicks are born free from infection) it

should be possible to prevent infection. Not all of these sources have been identified, but water supplies to chicken houses, often from bore holes, appear to be important. Improving the design and maintenance of these water supply systems has greatly reduced infection rates in specific studies, but more research is needed before the problem can be solved.

This leaflet has been compiled using information from the Association of Medical Microbiologists.



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**Environment Services
Department**

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the facts