

Wound infections due to *Vibrio cholerae* in Sweden after swimming in the Baltic Sea, summer 2006

Y Andersson¹ (yvonne.andersson@smi.ki.se), K Ekdahl²

¹Swedish Institute for Infectious Disease Control (SMI), Solna, Sweden

²European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden

In recent weeks, three people in Blekinge County in southeast Sweden were reported to have developed mild to severe wound infections caused by non-agglutinating (not O1 or O139) and non-toxin-producing *Vibrio cholerae* bacteria after outdoor water contact (Baltic Sea and possibly an irrigating pond). All 3 people had skin breakages, and two had other underlying diseases.

Environmental water samples from various sources have been analysed, and several samples from Baltic Sea coastal waters, and from four lakes have tested positive for non-agglutinating and non-toxin-producing *V. cholerae*. These strains have not yet been compared to those found in humans. The weather has been hot and sunny in Sweden during July, and unusually high surface water temperatures of over 20°C recorded.

There are 200 serotypes of the bacterium *V. cholerae*, of which O1 and O139 are toxin-producing and cause classical cholera with profuse, watery diarrhoea (sometimes exceeding 20 litres per day). Variants of the bacteria that are non-agglutinating and non-toxin-producing may rarely cause wound infections, mild diarrhoea and external otitis in people with skin breakages who bathe outdoors in warm, brackish water. The optimal growth conditions for these bacteria include a salinity of 0.4-1.7% and a water temperature exceeding +20°C. In such conditions the bacteria have been found in the Baltic Sea.

Classical cholera has been a notifiable disease in Sweden since 1919, and all forms of *V. cholerae* infection became notifiable on 1 July 2004. The last case of imported classical cholera to Sweden was notified in 2004. The same year, a severe, septic wound infection with non-agglutinating and non-toxin-producing *V. cholerae* was contracted after a patient bathed in an outdoor hot tub containing water from the Baltic Sea that had been heated to about 38°C [2].

The Swedish Institute for Infectious Disease Control is now advising people with any skin breakages not to bath and swim outdoors. A message has been posted on the European Union's Early Warning and Response System to inquire about *V. cholerae* wound infections recently seen in other European countries. Information may be sent by email to the author.

References:

1. Epidemiologisk årsrapport 2004. Smittskyddsinstitutet. Solna, 2005. (<http://www.smittskyddsinstitutet.se/upload/Publikationer/Epi-arsrapport-050623.pdf>)
2. Steen A. Farliga bakterier i träbadkaret! Smittskydd 2004;5:6-7.