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References


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Vancomycin-resistant Enterococcus faecalis isolates from a Danish patient and two healthy human volunteers are possibly related to isolates from imported turkey meat

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Sir,

The occurrence of vanA-positive Enterococcus faecalis in food animals and meat has been associated with the use of the glycopeptide avoparcin for growth promotion.1 vanA is relatively common in E. faecium isolates from meat and animals, whereas this resistance trait is rarely found in Enterococcus faecalis. Most vanA-positive E. faecalis have been isolated from hospitalized patients. vanA-positive E. faecalis with relation to meat or animals were found to be associated with poultry production in Asia and New Zealand.2,3

Extended sampling of poultry meat in the Danish Integrated Antimicrobial Resistance Monitoring and Research Programme (DANMAP) was performed in 2005 through 2006 resulting in 3116 samples collected from chicken meat (imported meat, n = 1060 and Danish meat, n = 1149) and turkey meat (imported meat n = 862 and Danish meat, n = 45). Enterococci were isolated without selective enrichment and identified as previously described in DANMAP 2006.4 No vancomycin-resistant E. faecalis (VREF) isolates were obtained from chicken meat. Three VREF were isolated from imported turkey meat (0.7%). The turkey meats with VREF originated from at least two different German slaughterhouses. The three VREFs were isolated in three different regions of Denmark, in October 2005, December 2005 and March 2006. To our knowledge, VREF has not been detected in turkeys before. Faecal samples from 525 healthy human volunteers were collected from March 2002 through December 2006. The Scientific Ethics Committee for the Copenhagen and Frederiksberg municipalities approved the protocol [(KF) 01–006/02]. Two VREF isolates were isolated from healthy human volunteers using a vancomycin-resistant enterococci selective method as previously described in DANMAP 2005.5 One VREF isolate was obtained in October 2005 from a male living in Jutland, Denmark, who had been travelling to Thailand, whereas the other VREF isolate was obtained in November 2005 from a woman with Japanese citizenship residing in Zealand, Denmark. For comparison, three vancomycin-resistant E. faecium isolates were obtained during the same period.

The vanA-positive E. faecalis isolates from turkey meat and healthy human volunteers were compared with the only Danish clinical vanA-positive E. faecalis isolate received at the Statens Serum Institut during the last 6 years. The clinical isolate was obtained from a male patient with leukaemia, hospitalized in 2003 for an allogeneic bone marrow transplantation. The patient was treated with sulfonamide/trimethoprim and ceftazidime for prophylaxis and with vancomycin due to a staphylococcal bloodstream infection. After the transplantation, VREF was isolated from blood cultures and in faecal swabs. The VREF infection was treated with ampicillin for ~1 month until blood cultures and faecal swabs were negative.

All six VREF isolates were resistant to vancomycin/teicoplanin, tetracycline and erythromycin encoded by vanA, tet(M) and...
VREF has never been isolated from retail meat in Denmark, even though retail samples of pork, broiler meat and beef have been collected in Denmark for the past 11 years. Turkey meat, on the other hand, has not been routinely sampled in DANMAP. Thus, only 67 turkey meat samples (in DANMAP 1997 and DANMAP 2001) have been collected. The finding of 0.7% vancomycin resistance in E. faecalis from imported turkey meat may seem low, but the finding of clonally related VREF from faecal samples from human volunteers during the same period and a hospitalized patient a couple of years before suggests imported turkey meat as a source for VREF in humans. The patient with the allogeneic bone marrow transplantation was treated with several antimicrobial agents that may have selected for the VREF infection. The patient had VREF-positive faecal swabs that could indicate a faecal origin of the VREF blood infection. An E. faecalis isolate with MLST type ST116 has only been detected once before in the MLST database consisting of 350 E. faecalis isolates, i.e. from a catheter from a patient in Havana, Cuba (Rob Willems, University Medical Center Utrecht, personal communication). Whether this type is more likely to cause infection is unknown.

In the European Union, avoparcin has not been approved for use in animal production since 1999, whereas tetracyclines and macrolides are extensively used for animal production and also in retail meat in Europe.

In conclusion, imported turkey meat containing VREF may be a source of VREF in the gut of healthy human subjects. The VREF from the intestine can cause infections if an individual is intensively treated with antimicrobial agents due to other severe illness.

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Lovastatin, but not pravastatin, limits in vitro infection due to Coxiella burnetii

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Sir,

Data from clinical, animal and in vitro studies suggest that statins could have a beneficial effect in sepsis.1 Although little data exist about the effect of statins on strict intracellular bacteria such as Coxiella burnetii,2,3 we know that the genome of these bacteria contains the steroid biosynthesis pathway, and bacterial multiplication is achieved in a vacuole rich in cholesterol.3 Inhibition of cholesterol with different compounds could lead to limitation or inhibition of the bacterial growth.2,3 Moreover, Q fever, the disease induced by C. burnetii, remains difficult to treat, especially the chronic form. To the best of our knowledge, only the in vitro effect of lovastatin on the growth of C. burnetii has been studied previously.2,3 In the present study, we evaluated the growth inhibitory effect of two statins, lovastatin and pravastatin, on C. burnetii Nine Mile strain. Bacteria were grown in L929 cells either with or without pre-incubation for 2 days with statins at non-cytotoxic