

DISEASE WATCH | IN THE NEWS

Antibiotics controversy

On 22 December 2011, the US Food and Drug Administration (FDA) announced that it will not regulate the use of antibiotics in animal feed that is used for livestock intended for human consumption. Banning the use of antibiotics to treat healthy livestock was originally proposed in 1977 following concerns that this use would decrease antibiotic effectiveness and lead to the generation of antibiotic-resistant bacteria. In particular, an advisory committee had recommended immediately withdrawing approval for the use of penicillin and of subtherapeutic doses of tetracycline in animal feed. In the announcement in the *Federal Register*, the FDA said that it now plans to allow the industry to self-regulate and “focus its efforts for now on the potential for voluntary reform and the promotion of the judicious use of antimicrobials in the interest of public health”.

However, in an announcement on 4 January 2012, the FDA issued an order prohibiting certain uses of cephalosporins (for example, using unapproved doses or using cephalosporins intended for other species) in cattle, swine, chickens and turkeys, effective 5 April 2012. A similar, but stricter, proposal had been made in 2008; however, it had been strongly opposed by ranchers and farmers. The aim of this new order is to preserve the effectiveness of cephalosporins and prevent the development of resistant bacteria.

The Guardian/NY Times/Federal Register



STOCKBYTE

Soothing the bite

Researchers have developed a gel that can be applied to tick bites to prevent Lyme borreliosis, a disease that is caused by *Borrelia* spp. and for which there is currently no prophylactic treatment or vaccine. The gel has been developed by a research group in the Fraunhofer Institute for Cell Therapy and Immunology IZI, Leipzig, Germany, together with the Swiss company Ixodes AG and the Institute for Infectious Diseases and Zoonoses of the Ludwig Maximilian University in Munich, Germany. The active ingredient of the gel is the antibiotic azithromycin, which can kill the bacteria locally on the skin, thereby preventing the development of disease. The researchers obtained promising results in preclinical studies, as the gel was effective in mice even 5 days after the tick bite. They are now carrying out Phase III clinical studies, testing the gel on individuals with proven tick bites. However, the researchers emphasize that the gel is only prophylactic and would not be effective on established infections.

Science Daily

The rules of attraction

The composition of the skin microbiota affects our attractiveness to mosquitoes, according to a recent study. Microbial communities in the skin are known to affect the production of human odours, which are key determinants of attractiveness to the mosquito *Anopheles gambiae sensu stricto*, one of the most important vectors of malaria in Africa. The study, carried out by Smallegange and colleagues from the Wageningen University and Research Centre in the Netherlands, found that humans with a higher abundance but lower diversity of bacteria on their skin are more attractive to this mosquito than those with a higher diversity of skin bacteria. The researchers postulate that more diverse skin bacteria may act as a defence system against malaria by emitting compounds that interfere with normal attraction to *A. gambiae* s.s., which, in turn, would make the individuals that carry them less attractive to the mosquitoes. This finding could potentially lead to the development of prophylactics against malaria infection that work by manipulating the composition of the skin microbiota and thereby reducing a person's attractiveness to the vectors.

PLoS ONE

UV rays not always bad?



MACMILLAN AUSTRALIA

A study has proposed that ultraviolet (UV) rays from the sun can prevent the spread of varicella-zoster virus (VZV), potentially by inactivating the virus on the skin before it transmits to another person. VZV, which causes chickenpox, was known to have geographical patterns of prevalence, with children living in the tropics showing lower rates of infection than those living in temperate areas. Although differences in heat and humidity were thought to underlie this pattern, Philip Rice, a researcher at St George's University in London, UK, hypothesized that UV rays are the climatic factor responsible, as they show the largest difference between tropical and temperate regions. To examine this possibility, he plotted data from previously published studies on VZV prevalence patterns against a range of climatic factors and found that UV rays showed the best correlation with virus prevalence. This observation may also explain why, in temperate regions, VZV transmission is lower during the summer months, when UV radiation is at its highest.

Viol. J./BBC

Outbreak news

Influenza. The first case of human bird flu in China since June 2010 has been reported. A man has died in Shenzhen, Guangdong Province, China, after becoming infected with H5N1 — the man is thought to have had no direct contact with poultry and not to have travelled outside Shenzhen. Health officials in neighbouring Hong Kong have urged vigilance to prevent new infections, and imports of poultry and poultry products have been suspended. **BBC**

In the News was compiled with the assistance of David Ojcius, University of California, Merced, USA. David's links to infectious disease news stories can be accessed on his Twitter page (@Ojcius).