

Livestock's role in antibiotic resistance

Increasingly, infectious disease specialists have been campaigning against excessive use of antibiotics. They argue, the greater the exposure of bacteria to these drugs, the greater will be the chance that the microbes become resistant to them. While public attention has focused on the prescription practices of doctors, about one-quarter of the antibiotics dispensed in the United States aren't targeted at diagnosed disease. Instead, they're administered in subtherapeutic doses to promote weight gain in apparently healthy livestock.

In the past year, several strains of pathogenic bacteria with resistance to nearly all known antibiotics have emerged. Because most human antibiotics are also administered to animals, the National Research Council (NRC) and the Institute of Medicine (IOM) in Washington, D.C., convened an expert panel to explore drug use in livestock—especially growth-promoting, subtherapeutic applications—as a factor behind antibiotic resistance in foodborne bacteria.

The panel reports that cases of antibiotic-resistant human disease have “clearly occurred” due to bacteria from livestock treated with the drugs. Data indicate that growth-promoting use of antibiotics has fostered at least some of that resistance, says panel member George W. Beran, a veterinarian at Iowa State University in Ames.

However, Beran observes, the extent to which agricultural use is diminishing antibiotics' utility in fighting human disease “has not yet been quantified with hard data.” It remains unclear whether the documented cases reflect a widespread problem or just a few isolated outbreaks, he says. Indeed, the new report concludes that antibiotic use in livestock “does not appear to constitute an immediate public-health concern,” but it cautions, “additional data might alter this conclusion.”

Hoping to resolve the uncertainties, the panel calls for a standing task force. Its members, to be recruited from both human and veterinary medicine, would be charged with collecting and analyzing data not only on the emergence of resistant strains of bacteria but also on the ways and the places that specific antibiotics have been used.

In the meantime, the panel calls for “propitious use of subtherapeutic antibiotics,” Beran says—which means, “if there are alternatives, consider using them.”

As the “first authoritative U.S. report to explicitly acknowledge that use of antibiotics in farm animals poses a risk to human health,” this is a “landmark” document, says Patricia B. Lieberman of the Center for Science in the Public Interest, an advocacy group in Washington, D.C. However, she finds its recommendations “soft,” arguing that sufficient data

already exist for the NRC/IOM panel to have justified “ending the subtherapeutic use of antibiotics.”

Says Beran, “We didn't consider that tenable.” Where subtherapeutic antibiotics have been phased down or out, data show that overt animal disease requiring antibiotic therapy sometimes increases, he adds.

Not in Sweden, observes Stuart B. Levy, director of the Center for Adaptation Genetics and Drug Resistance at Tufts University in Boston. At a World Health Organization (WHO) meeting in Berlin on livestock and antibiotic resistance last October, Martin Wierup of the Swedish Animal Health Service in Johannesov described how farmers coped with Sweden's 1986 ban on antibiotics to promote livestock growth.

While infectious outbreaks in the first year increased the need for antibiotic therapy, Levy says, use of the drugs fell thereafter. Total antibiotic use for food animals in Sweden is now 55 percent lower than before the ban, according to a



To boost the growth of closely confined swine, U.S. farmers buy feed containing subtherapeutic doses of any of 21 antibiotics.

report by Wierup to be published this month in the ALLIANCE FOR THE PRUDENT USE OF ANTIBIOTICS NEWSLETTER.

Though Frederick J. Angulo of the Centers for Disease Control and Prevention in Atlanta would also prefer that “all growth-promoting use of antibiotics be terminated,” he would be willing to accept the more limited recommendation that came out of the Berlin meeting—a ban on the subtherapeutic treatment of livestock with antibiotics prescribed for people or with closely related drugs. —J. Raloff

Women with anorexia face ongoing problems

Young women diagnosed with anorexia nervosa literally waste away as they lament their bodies' perceived fatness. But even if they gain some weight, they may face a bleak psychological future. A new study confirms earlier indications that for more than a decade after getting psychiatric help for their eating habits, many of these women continue to struggle with low body weight and a variety of mental problems, including attitudes typical of anorexia nervosa but insufficient to warrant a formal diagnosis.

After 12 years, women who had shed their diagnosis of anorexia nervosa in response to treatment were much thinner than women in their community who had never had any eating disorders, report psychiatrist Patrick F. Sullivan of Virginia Commonwealth University in Richmond and his colleagues.

The treated women also displayed a desire for achieving perfection in their daily activities and a preoccupation with their weight and eating habits, attitudes implicated in anorexia nervosa. Furthermore, a disproportionate number of them suffered from major depression, alcohol dependence, and certain anxiety disorders.

Current short-term treatments for anorexia nervosa that emphasize weight gain “may be inappropriate,” Sullivan's team contends in the July AMERICAN JOURNAL OF PSYCHIATRY. Clinicians need to address psychological attributes and mental ailments that persist in the aftermath of diagnosed anorexia, they hold.

The researchers studied 70 women

diagnosed with or treated for the first time for anorexia nervosa at an eating disorders clinic in Christchurch, New Zealand, between 1981 and 1984. Twelve years later, each participant completed a psychiatric interview, as did 98 local women chosen at random from voting rolls and who did not have any eating disorders.

Anorexia nervosa persisted in 7 of the 70 women seen at the clinic, a proportion consistent with previous estimates. Nearly all of the rest showed some psychological attributes linked to anorexia nervosa and met criteria for at least one other psychiatric disorder. One woman died during the study, a suicide victim.

In the anorexia group, 42 had at some time—usually in the past 12 years—developed major depression or another mood disorder, 42 had experienced phobias or other anxiety disorders, and 19 had been alcohol dependent. More than half of the anorexia group had at some point secretly binged and purged, thus meeting criteria for bulimia nervosa. Prevalence rates for these disorders were much lower in the comparison group.

“This is the best look to date at other types of psychopathology that occur and persist among people with anorexia,” remarks psychiatrist James I. Hudson of Harvard Medical School in Boston.

The new findings coincide with evidence that depression can linger for years in a mild form that undermines daily functioning, adds psychiatrist Joel Yager of the University of New Mexico School of Medicine in Albuquerque. —B. Bower