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# ANTIBIOTICS AND ANTIBIOTIC RESISTANCE

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## Strategies to modify the current usage of antimicrobials in Indian animal health sector

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We have been using antibiotics for the last so many decades for the therapeutic and animal growth production. There are no stringent laws to minimize the indiscriminate use of antibiotics. Inappropriate usage of antibiotics has led to many problems, mainly antibiotics resistance and residues in veterinary sector. More than 70% of the antibiotics are being used in animal sector for the growth production by the persons who are not having any knowledge about antibiotics. For the last three decades, there has been no major approval for new antibiotics. We have to focus on preserving the current antibiotics for the future generations. There is no scientific base for the usage of antibiotics in India. Even an ordinary layman gets antibiotics over the counter without any prescription. At this juncture it is the responsibility of each and every individual of this country to use antibiotics in a rational and legitimate use. In this regard, author would like to present his views of comprehensive strategies to be adopted for changing norms for reducing unnecessary and inappropriate use of antibiotics in India.

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## Patterns of antibiotic susceptibility of urinary tract infection-causing bacteria in general hospital in Lithuania

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**Statement of the Problem:** Urinary Tract Infections (UTIs) are some of the most common infectious diseases. Rapidly rising antibiotic resistance among uropathogens is one of the main problems in treating UTIs. There is little data about the antibiotic susceptibility patterns of UTI-causing bacteria in Lithuania. The purpose of this study was to determine the susceptibility patterns of UTI-causing bacteria, and to assess the possible factors that influence resistance to antibiotics.

**Methodology:** Details of bacteria grown from 149 urine samples was collected and analyzed from December 2015 to February 2016.

**Results:** The most commonly isolated uropathogen was *Escherichia coli* (47.65%), followed by *Klebsiella pneumoniae* (20.13%), *Enterococcus* spp. (11.11%) and *Proteus* spp. (8.47%). *E. Coli* isolated from urine samples was resistant to ampicillin (52.11%), ciprofloxacin (28.17%) and trimethoprim (26.76%), while *K. pneumoniae* showed high resistance rate to nitrofurantoin (83.33%), ampicillin/sulbactam (80.00%) and cephalosporins (76.67%). *Enterococci* showed frequent resistance to trimethoprim (71.43%), ciprofloxacin (57.17%) and ampicillin (42.86%), *Proteus* spp. demonstrated frequent resistance to nitrofurantoin (76.92%), trimethoprim/sulfamethoxazole (61.54%) and ampicillin (46.15%). All *E. Coli*, *Enterococcus* spp., *Proteus* spp. and *K. pneumoniae* isolates were susceptible to imipenem and meropenem, and all enterococci were susceptible to linezolid. In patients who had previously taken fluoroquinolones, aminopenicillins, cephalosporins and trimethoprim/sulfamethoxazole, *E. Coli* showed significant higher resistance rate to antibiotics. In patients with nosocomial UTIs, *E. Coli* displayed significantly higher resistance to ciprofloxacin, gentamicin and ampicillin than patients with community-acquired UTIs, the same pattern was observed in *Enterococcus* spp. resistance to vancomycin.

**Conclusion & Significance:** Alarming high rates of antibiotic resistance were observed among the most common uropathogens. It is necessary to periodically investigate antibiotic resistance and frequently adjust treatment recommendations according to the collected data.

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