

hallucinations is unusual for intoxication with atropine or scopolamine, but could be explained by delayed digestion of non-ground Jimson weed seeds. Postprandial 'inability to vomit', followed by unconsciousness and auditory hallucinations, as reported by this patient, clearly is consistent with tropane alkaloid poisoning, and, together with laboratory results (50 seeds *D. stramonium*/kg of grain), confirm contamination by Jimson weed to be the cause of this event.

Foodborne disease outbreaks are recognized by the occurrence of illness within a variable but usually short time period after a meal, among individuals who have consumed foods in common. Prompt and thorough laboratory evaluation of cases and implicated foods is essential. Food poisoning due to Jimson weed may mimic *B. cereus* food intoxication and therefore should be considered as a differential diagnosis. The increasing propagation of organic farming with the refusal to use pesticides may increase the occurrence of food poisoning due to Jimson weed in the future.

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Antimicrobial resistance among urinary tract *Escherichia coli* isolates from inpatients and outpatients in a tertiary care center in São Paulo, Brazil

Urinary tract infections (UTIs) having pathogenic *Escherichia coli* as the etiologic agent, remain a common and troublesome health problem in many countries, resulting in considerable morbidity and costs.¹ Non-complicated infections, particularly in women, account for the highest number of UTIs. Women diagnosed with acute uncomplicated cystitis are usually treated as outpatients; the microbiologic characteristics of this infection are highly predictable even in otherwise healthy subjects. Physicians have therefore been advised that empirical antimicrobial treatment not requiring culture is appropriate in such cases. This empiric therapy has been widely employed and fewer UTI germs are now routinely cultured. However, increasing antibiotic resistance of uropathogens causing both community- and nosocomially-acquired UTIs has been clearly demonstrated.^{2,3}

Different levels of population treatment exist within the health system in Brazil. 'Primary care' takes place at the municipal health center (essentially a doctor's office), 'secondary care' is performed at the municipal hospitals, and the 'tertiary care' system essentially takes place at university teaching hospitals. Within these systems, updated knowl-

edge of causal bacteria and their susceptibility patterns is important for the proper selection and use of antibiotics, as well as for an appropriate prescribing policy. We conducted a study to verify the antimicrobial resistance of *E. coli* among UTI isolates from the 'primary care' and 'tertiary care' systems in Ribeirão Preto, São Paulo, Brazil.

The antimicrobial resistance profile infection data obtained from the Clinical Hospital of the School of Medicine of Ribeirão Preto (HCFMRP), a university teaching hospital, and from municipal health centers, concerning *E. coli* isolated from UTI patients, were monitored and analyzed. Isolates were collected between July 2000 and July 2003. A total of 67 strains of *E. coli* isolated from HCFMRP and 78 strains from the municipal health centers were analyzed. The isolation and identification of *E. coli* strains was performed by minimal standard bacteriological tests using conventional biochemical markers;⁴ one isolate per patient was evaluated. Antimicrobial susceptibility was determined by the Kirby–Bauer disk diffusion method following the definitions of the National Committee for Clinical Laboratory Standards (NCCLS) for agar diffusion tests⁵ using antibiotic-containing disks (CEFAR Diagnostica Ltd, São Paulo, Brazil). Quality control was performed using *E. coli* ATCC 25922.

Tests on the susceptibility of *E. coli* isolates to antimicrobial drugs showed that the highest rates of resistance were found among those from the hospital patients, with resistances at least twice as high as those of the isolates

Table 1 Antimicrobial resistance of *Escherichia coli* isolates from a tertiary-care teaching hospital and municipal health centers in Brazil

Antibiotic	Resistance (% of isolates)	
	Hospital (67 strains)	Municipal health centers (78 strains)
Ampicillin	65.0	37.0
Cephalothin	58.0	8.0
Cefoxitin	24.0	0.0
Cefuroxime	18.0	1.0
Ceftriaxone	6.0	1.0
Gentamicin	13.0	0.0
Tobramycin	22.0	3.0
Tetracycline	73.0	31.0
Norfloxacin	31.0	12.0
Nitrofurantoin	18.0	5.0
Trimethoprim/ sulfamethoxazole	58.0	29.0

from the municipal health centers. Resistance was highest to tetracycline (73.0%), ampicillin (65.0%), cephalothin (58.0%) and trimethoprim/sulfamethoxazole (TMP/SMX, 58.0%) (Table 1). In spite of the high potency of fluoroquinolones against *E. coli* isolates, a relatively high resistance to norfloxacin was observed: 31.0% in the hospital and 12.0% in the municipal unit patients (Table 1).

UTIs are one of the most common infectious diseases diagnosed in outpatients as well as in hospitalized patients. Susceptibility to antimicrobial agents among hospitalized patients^{3,6} and among outpatients^{7,8} has been shown. The rates we report in the present study for patients from the hospital agree with those reported by Gales et al.³ in antimicrobial surveillance studies in Latin American hospitals including some from Brazil, but are higher than those reported for Canadian⁶ hospitalized patients.

Many factors may have contributed to such high rates of resistance including misuse of antibiotics by healthcare professionals or non-skilled practitioners, misuse of antibiotics by the general public (antibiotics can be purchased in Brazil without a prescription), and inadequate surveillance due to a lack of information arising from routine antimicrobial susceptibility testing. The resistance rates to isolates from the municipal health centers reported in the present study are higher⁷ or lower⁸ than those reported in other studies; however, in all of these other studies, the reported rate of fluoroquinolone resistance was lower than that observed in the present study.

In agreement with the high rates reported in the present study, a significant increase in resistance of uropathogenic strains to TMP/SMX, ampicillin and cephalothin has been found worldwide;⁹ therefore, these agents are in general not recommended for first line empirical treatment of UTIs. Therapies other than those described above may have to be taken into consideration in Brazil, possibly using older agents like gentamicin and nitrofurantoin that still show high efficacy against UTI pathogens.

In conclusion, *E. coli* isolated from hospital or municipal health center UTIs are to a significant extent resistant to many antimicrobial agents. The use of TMP/SMX, ampicillin

and cephalothin against uropathogens has to be re-examined. Also, the high resistance rates to fluoroquinolones in Brazil gives rise to concern. Regular monitoring of antimicrobial drug resistance appears necessary to improve our guidelines for empirical antibiotic therapy.

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