

ABSTRACT

Background

Antibiotic resistance is a public health concern in Democratic Republic Congo and worldwide. It is usually caused by antibiotic over prescription or dispensing practices. The consumption of animal source food (ASF) could be another source of antibiotic resistance but is rarely studied. The objective of the study was to evaluate the eating habits of ASF by outpatients with antimicrobial resistance through an analysis of (i) the association of their antimicrobial resistance with ASF consumption; (ii) the influence of the types of ASF on their antimicrobial resistance.

Methods

This is a retrospective analytical study conducted at three major Hospitals in Bukavu City (D. R. Congo). A total number of 210 patients, whose samples (mainly faeces and urine) had been subjected to bacterial examination, was included in this study. Morphological, biochemical and antibiotic susceptibility (using disc diffusion method) tests were performed on the samples. This served to isolate and identify resistant bacteria. Afterwards, patients responded to questions about the types and quantity of ASF eaten in the last week. We analysed data using descriptive statistics, logistic regression and non-parametric ranking tests.

Results

Escherichia coli (37.1%), *Klebsiella pneumoniae* (14.7%), and *Staphylococcus aureus* (13.8%) were the most prevalent bacteria. *E. coli* (68.4%) and *K. pneumoniae* (87.5%) were multidrug resistant (MDR), while *S. aureus* (7.7%) was minor. Low beef (O.R. 0.737, C.I. 0.542–1.002) and pork (O.R. 0.743, C.I. 0.560 – 0.985) consumption led to significantly ($p < 0.05$) lower risks of resistance to ciprofloxacin. Patients eating three different ASF per week had the highest resistance score (20.67) and high consumption rates of goat meat, pork and milk (41.5%).

Conclusion

The findings of this study suggest a contribution of human nutrition to antimicrobial resistance frequency. Our results show the existence of a high prevalence of multi-drug resistant bacteria in patients for which eating beef, pork and drinking milk are major risk factors. Therefore, a stricter control of antibiotic usage in livestock production and of their presence in ASF is recommended.