INTRODUCTION

Antimicrobial resistance is a growing threat to public health worldwide. Indiscriminate use of antibiotics has been identified as one of the major factors associated with the escalating rates of resistance. About 80% of antibiotic use in humans occurs in the community, with the bulk of it contributed either by prescription from primary healthcare providers or self-medication. A study on morbidity patterns in 82 public clinics and 38 private clinics in Malaysia reported that upper respiratory tract infections (URTIs) account for 16.5% and 21.2% of total encounters in the public and private health clinics respectively. Despite the predominantly viral cause and evidence demonstrating lack of clinical benefit with antibiotic use, the irrational prescribing of antibiotics in URTIs is still reported to be occurring at high rates. Song and colleagues found penicillin and erythromycin resistance ranges from 1.3% to 92.1% in S. pneumoniae isolates collected from 14 centres in 11 Asian countries including Malaysia. Studies which assessed the trends of antimicrobial prescribing in URTI over the past two decades have shown decrease in overall antibiotic prescribing in URTI but also a significant rise in the prescribing of broad-spectrum agents. This raises concern for the overprescribing of newer broad-spectrum antimicrobials in respiratory tract infections where usually no antibiotics or a narrow-spectrum antibiotic would suffice.

OBJECTIVES

To quantify the prescribing rates of antibiotics in URTIs in Malaysian primary healthcare institutions and determine the factors which influence overall antibiotic and broad-spectrum antibiotic prescribing in URTIs.

METHODS

This is a cross-sectional study using data from the 2010 National Medical Care Survey (NMCS) on morbidity and prescription patterns. Doctors whose clinics are sampled in this survey were asked to complete a standard encounter form for each eligible patient encounter for a day on a randomly allocated date between December 1st, 2009 and April 4th, 2010. Prescribers from 122 (81.3%) public clinics and 652 (50.5%) private clinics in Malaysia responded. Further details on the diagnosis and medication coding may be found in the survey report. Inclusion criteria: Diagnoses of upper respiratory tract infection (ICPC-2 code R47), cough (R03), sneezing/nasal congestion (R07), throat, breath sound/condition (R31), acute, chronic sinusitis (R35), acute otitis media (R36), acute laryngitis/tracheitis (R17), acute bronchitis/bronchiolitis (R58), influenza (R06) and acute otitis media/myringitis (R71). The diagnoses of influenza (R06), acute/chronic sinusitis (R35) and laryngitis/tracheitis (R17) were analysed together as other respiratory diagnoses. Only antibacterials for systemic use were included in this analysis. Pharmacological groups that were included are penicillins, cephalosporins, macrolides, lincosamides, quinolones, tetracyclines, aminoglycosides and sulphamides/trimethoprim. Ampicillin or amoxicillin + enzyme inhibitor, sulfamethoxazole/trimethoprim, cotrimoxazole are classified as broad-spectrum antibiotics. A study on morbidity patterns in 82 public clinics and 38 private clinics in Malaysia reported that upper respiratory tract infections, with the bulk of it contributed either by prescription from primary healthcare providers or self-medication.

RESULTS

To quantify the prescribing rates of antibiotics in URTIs in Malaysian primary healthcare institutions and determine the factors which influence overall antibiotic and broad-spectrum antibiotic prescribing in URTIs.

DISCUSSIONS

• Overall antimicrobial prescription is high. This may be explained by factors including fear of untoward clinical outcomes, a desire to meet patients’ expectations, lack of formal guidelines and believing that overprescribing antibiotics on an individual level do not significantly impact overall antimicrobial resistance.

• Highest antibiotic prescriptions are for acute tonsillitis and acute bronchitis (95.76% & 75.83%, respectively), of which both are predominantly of viral origin.1,2

• High proportion of broad-spectrum agents prescribed in URTI is a cause for concern when narrower spectrum agents are primarily recommended where bacterial aetiology is suspected.

• The young, healthier adults and older population are more likely to receive antibiotics for URTI than children below 5 years possibly because this group comprises of mainly working adults, who may request for antibiotics while the elderly are perceived as more likely to develop complications from respiratory infections.4

• Overall and broad-spectrum antibiotic prescription in URTI is highly correlated with the method of payment (overall: OR, 3.86; 95% CI, 3.30-4.51 & broad-spectrum:OR,13.38;95% CI, 6.56-27.39). As most patients are paying consultations in private clinics, GPs’ may feel compelled to prescribe an antibiotic if they think that it is what the patient expects and also because they believe patients may not return if the expectations are not fulfilled.7

• Lower proportion of use of broad-spectrum agents in publicly-funded consultations may be attributed to the restricted antibiotic options in the national drug formulary.

• Conclusion: Both overall and broad-spectrum antibiotic prescribing are higher in private consultations than in public clinics. These higher prescribing rates are associated with the type of URTI diagnosis, patient age, ethnicity, and source of payment in both overall and broad-spectrum antibiotics prescribing models.

REFERENCES