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Research Article

A Questionnaire Survey: Knowledge in Upper Airway Infections among General Practitioners in Malaysia

Abstract

Background: Upper respiratory tract infections (URTI) cases are one of the most frequently seen cases in the primary care setting. The causative agents are either bacteria or virus. It is not easy to differentiate among them. In term of treatment for both conditions, certain principles of treatment are advised to be followed.

Objective: To assess the knowledge, attitude and experience of General Practitioners (GPs) on upper respiratory tract infections (URTI) as well as on antibiotics usage.

Methods and Materials: In a six months nationwide prospective study, 152 Malaysian GPs participated by answering a questionnaire relating to views on common clinical presentations of upper airway infections, management of disease and the usage of antibiotics. The results from the questionnaire were tabulated and analyzed with SPSS version 22.

Results: 67.8% of the participants were from the private sector while the rest were from the government sector. One participant has a postgraduate in family medicine while the remaining have a basic undergraduate degree. In upper airway infections clinical presentation, 61% were able to answer the questionnaire correctly. Around 50 % will wait and assess the symptoms for about 3 – 5 days before starting antibiotics with the penicillin group as the first choice of antibiotics. We also note that 75% of participants adhere to the guidelines for antibiotics prescription.

Conclusions: The knowledge and management of upper airway infections are adequate among the GPs in Malaysia. It can however be improved for the benefit of patients.

Introduction

Upper respiratory tract infections (URTI) are one of the most frequently seen cases in the primary care setting. Patients often present with cough, runny nose, sneezing, nasal itchiness, sore throat and many other symptoms such as lethargy and body ache. Acute rhino sinusitis, pharyngitis, tonsillitis and acute otitis media are among the common diagnosis. As most URITs are caused by viruses, the symptoms are usually self-limiting and only requires symptomatic relieve. The effectiveness of antimicrobial in shortening the course, minimizing the symptoms and reducing the complications remains controversial [1]. Microbiological examinations for URTI are not frequently done as it is time consuming and not cost effective. The clinical symptoms and features may not point to a viral or bacterial in origin making the decision of antibiotic prescription empirical in nature. Therefore, the knowledge, attitude and experience of the general practitioners (GPs) play

an important role in the management of URITs especially on antibiotic prescription.

Methods

A total of 152 GPs participated in a 6 months prospective study from June 2014 to December 2014 by answering a series of questionnaire given to them during a nationwide seminar which was held in various cities in Malaysia throughout the study period. The GPs consisted of those practicing in both the government and private sector with the majority coming from the private sector (67.8%). The questionnaire consisted of 17 questions which was designed to obtain information on the common presentation of URITs and the management of URITs. It included antibiotic choices, decision on starting antibiotics, duration of antibiotics and referral to a tertiary centre. It also covered some basic knowledge on microbiology. The results were tabulated and analyzed by using SPSS version

22. A descriptive analysis was produced representing all data that were collected.

Results

All GPs who participated in the study responded by answering the questionnaire. The age of the participants ranges from 21 to 70 years old with the largest group being the 51-60 age group which accounts for 32.9% of the total participants. 69.7% of the participants were male and 30.3% were females. Only one participant has a postgraduate masters while the others have at least an undergraduate degree.

For questions concerning upper respiratory tract infections, about 61% were able to identify the common clinical features associated with acute rhino sinusitis (nasal obstruction, purulent nasal discharge, facial pain). However, only about half (49%) were able to differentiate between a polyp and a turbinate clinically. When the GPs were asked on how they would differentiate a URTI that was caused by a virus as opposed to a URTI that was caused by bacteria, 36.2% choose the severity of the clinical features as the main indicative factor while 28.9% choose the duration of the disease as the main determinant of the causative agent with symptoms that were more severe and last longer pointing to a bacterial origin.

With regards to antibiotics, analysis of the responses revealed the following - 54.6 % will wait 3-5 days to reassess before starting the patients on antibiotic while about half of that number will wait longer (5-7days). About two-thirds will give a course of antibiotics for a week while a third will give a course ranging from 1-2weeks. Antibiotic guidelines were followed by 75% of the participants. The main antibiotic of choice for acute rhino sinusitis, acute pharyngitis/tonsillitis and acute otitis media is penicillin. The second choice of antibiotics for both acute rhino sinusitis and acute otitis media is macrolides while for acute pharyngitis/tonsillitis the second choice is cephalosporins. 80% of participants will refer a case of URTI to an ENT specialist if the patient is not responding to treatment. On the topic of microbiology, 85% were able to identify the 3 most common bacteria causing acute rhino sinusitis (Tables 1-4).

Table 1: Participants age group.

Age Group	Frequency	Percentage (%)
21-30	10	6.6
31-40	28	18.4
41-50	42	27.6
51-60	50	32.9
61-70	22	14.5
Total	152	100.0

Table 2: Participants' gender.

Gender	Frequency	Percentage (%)
Male	106	69.7
Female	46	30.3
Total	152	100.0

Table 3: Differentiating viral or a bacterial cause.

	Frequency	Percentage (%)
Duration	44	28.9
Severity	55	36.2
Culture	25	16.4
Blood profiles	28	18.4
Total	152	100.0

Table 4: Choices of antibiotics.

	First Choice Antibiotics	Second Choice Antibiotics
Acute Rhinosinusitis	Penicillin (67.1%)	Macrolide (44.7%)
Acute Pharyngitis/ tonsillitis	Penicillin (73%)	Cephalosporin (46.7%)
Acute Otitis Media	Penicillin (63.2%)	Macrolides (33.6%)

Discussions

Upper respiratory tract infections (URTI) are one the most common reason for a medical consultation. A study in 1997 showed that URTI account for 35 million visits to GPs in the United States of America alone with 50% of those visits, antibiotics were prescribed [1]. Studies in Europe showed a slightly lower antibiotics prescription rate of 33-41% in patients with URTI [1]. The knowledge and attitude of GPs in URTI are important as they play a major role in the management of patients. Our study on the knowledge of URTI which covers the causes, common causative organisms, clinical presentation, choice of antibiotics and the reason of referral shows adequate knowledge as almost two thirds were able to correctly identify the clinical features of acute rhino sinusitis.

As most URTIs are caused by virus instead of bacteria in the beginning, a good understanding on the differences in the clinical presentation will determine the course of management for the patient. Separating patients with bacterial infections from nonbacterial infections can be difficult as the signs and symptoms are indistinguishable. Investigations and routine microbiologic and radiographic studies are not practical in all case and are usually reserve for those who fail the initial therapy [2].

A study conducted in Israel on the aetiology of URTI in the community showed that the main organisms for URTI are viruses which include influenza virus, respiratory syncytial virus, adenovirus or a combination of a few viruses [3]. The prevalence of bacteria mainly *Streptococcus Pneumoniae*, *Moraxella Catarrhalis*, and *Hemophilus Influenza* were very low in the study. Respiratory tract infections with bacteria aetiology are more frequently seen in the hospital setting [3].

The antibiotics of choice for sinusitis by the majority of the participants in our study were in line with the American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) latest 2015 guidelines [4] which recommends amoxicillin as the first line antibiotics for acute rhino sinusitis [4]. For uncomplicated cases, watchful waiting was also recommended. Amoxicillin is recommended by Centers for Disease Control

and Prevention (CDC) as first choice for acute otitis media which was the main choice of antibiotics for 63.2% of our study participants [2].

Many doctors prescribe antibiotics based on the rationale that patients with bacterial infections will benefit and receive appropriate treatment while those with viral infections will suffer little or no harm from a course of antibiotics [2]. A Mexican study in the paediatric population showed that the mean duration of signs and symptoms and the culture for the causating organisms were comparable among children treated with or without antibiotics [5]. Relevant information such as recent antibiotics usage or recent hospital admission is important [2].

Mainous et al., in their study on 250 primary care physicians note that, physicians are more likely to prescribed antibiotics (59%) if the URTI discharge is discoloured compared to if the discharge is clear (8%) [6]. A study by E.A Belongia et al., on the patients' perception on antibiotics showed that the general public also has a misconception on antibiotic usage [7]. Close to 70% of the participants (adult and parents) believe that antibiotics are needed when there is green or yellowish nasal discharge. About 50% believed that they know an antibiotic is needed even before consulting a doctor [7].

In conclusion, generally, the knowledge and management of upper airway allergy and infections among GPs in Malaysia are sufficient and comparable to the studies done. In term of antibiotics usage, most of GPs follow the AAO-HNS 2015 guidelines. This is crucial to prevent antibiotics resistant in future. As URTI is a very common disease treated among GPs, latest updates or courses should be organized for them.

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This manuscript is our own work, it is not under consideration by another journal, and this material has not been previously published.

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