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Research Article

TREATMENT OF SYMPTOMS OF COMMON COLD BY GENERAL PRACTITIONERS IN MALAYSIA

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ABSTRACT

This cross-sectional study was conducted at 50 clinics (25 in urban areas and 25 in rural areas) of private general practitioners (GPs), using a disguised-customer design. The researcher presented at each clinic as a patient complaining of symptoms of common cold. The treatment and advice given was recorded. Medicines prescribed were cough medicines (25.5%), antibiotics (18.5%), antipyretic/analgesics (14.8%), antihistamines (13.9%), lozenges (11.6%), combination of antihistamines and decongestants (9.7%), vitamin C (2.7%) and other medications (3.7%). Overall, 80% of the GPs prescribed antibiotics and this was more prevalent in the rural clinics (92% versus 68%, p = 0.034). There were significant differences in the instructions given to the patients by the clinic assistants in the urban and rural areas. The average treatment cost was RM31.76±9.43, with significant difference between urban and rural clinics (RM35.72±6.41 versus RM27.80±10.38, p<0.05). The high prevalence of antibiotics prescribed for common cold is a cause for concern.

Keywords: Common cold, Antibiotics, Irrational use, General practitioners.

INTRODUCTION

Common cold is a widely experienced upper respiratory tract infection[1] and approximately 25% of adults surveyed had taken a cough or cold medication in the preceding week.[2] Although sufferers of the common cold will usually recover over time without any specific treatment, it is still a common reason for GP consultation and absenteeism from work or school[3] as well as an illness that can affect mood and performance.[4]

Common cold is caused by a viral infection, resulting in inflammation of the mucous membrane of the upper respiratory tract that is the nose, pharynx and trachea, leading to symptoms such as rhinorrhoea, sore throat, irritant cough and generalised malaise. The infection may be caused by rhinoviruses, parainfluenza viruses, respiratory synctial viruses (RSV), coronaviruses, adenoviruses and enteroviruses but, the most common cause is the rhinoviruses (30-50%).[5] There is no standard treatment for common cold due to the vast variety of viruses involved in its etiology but patients usually recover spontaneously in less than a week.[6] Sufferers of common cold often self-medicate and symptomatic treatment to relieve symptoms such as runny nose, cough and teary eyes is most often practised.[7]

Common cold has been considered as the most common cause of acute cough which can last for up to 14 days after onset of the common cold, even without any bacterial infection.[1] The diagnosis of common cold is usually based on the physician's assessment of the signs and symptoms and this can be difficult because of the similarities with the clinical features of pharyngitis, sinusitis and allergic reactions.[8]

In the Malaysian healthcare system, for an illness like a common cold, the patient has the option to go to a government hospital/clinic and obtain free treatment or go to a private general practitioner and pay for the treatment. The private general practitioners are legally allowed to diagnose and dispense medication at their clinics. Government hospitals/clinics are associated with long waiting times and many patients prefer to avail or faster and more easily accessible treatment from general practitioners at private clinics. This study was conducted to document the treatment provided and the charges by GPs for the presentation of common cold and also to see if there were differences between clinics in rural and urban areas.

METHODOLOGY

This was a cross-sectional study which was conducted over a 4-month period at private general practitioners' clinics in seven states of Malaysia (Federal Territory, Selangor, Negeri Sembilan, Johor, Kedah, Penang and Perak), using a disguised-customer design. A total of 50 GP clinics were selected using convenience sampling, 25 from urban areas and 25 from rural areas. The researcher would go to a certain location, rural or urban, and go to the first clinic that was noticed. Subsequently, the researcher would drive further and go to the next clinic that was noticed.

Only 1 researcher was involved in the visits to the clinics. Using a prepared script, the researcher posed as a patient with the following signs and symptoms: sneezing, runny nose, sore throat, cough with clear phlegm, mild fever and body weakness. The researcher was supposed to be allergic to penicillin, but this information was provided only if asked by the GP. Immediately after leaving the clinic, the researcher recorded all the data in a checklist which had been prepared earlier.

All data collected was entered and analysed using the Statistical Package for Social Science (SPSS), version 16. Mann Whitney U test was used to analyse group differences and the Pearson Chi-Square test for differences between 2 variables.

RESULTS

Table 1 shows the types of medications prescribed by the GPs for the simulated patient. A total of 216 medications were prescribed by the 50 different GPs. "Cough" medications (consisting of antitussives, mucolytics, sympathomimetics and antihistamines in various combinations) were the most frequently prescribed (25.5%), followed by antibiotics (18.5%), paracetamol or nonsteroidal anti-inflammatory drugs (NSAIDs) and the first generation antihistamines. Other medications given were multivitamins (0.9%) and gargles (0.5%).

Forty of the GPs (80%) prescribed antibiotics for the simulated patient. The most common class of antibiotic prescribed was the macrolides (40.0%), followed by penicillins (30.0%), cephalosporins (12.5%) and others which included quinolones, and tetracyclines (17.5%). None of the GPs asked if the patient was allergic to penicillin. One of the GPs prescribed two different antibiotics for the patient. The prescribing of antibiotics was more prevalent in the rural clinics than in the urban clinics (92% versus 68%, p = 0.034).

There was no difference in the number of medications supplied by GPs in the urban clinics as compared to the rural clinics (t=1.113, p=0.271). The number of medications prescribed for the patient ranged from 2 to 8. More than 90% of the GPs prescribed 3 to 5 medications (14% =3 medications, 36% = 4 medications and 42% = 5 medications). Non-pharmacological treatment such as advice to drink more water, rest and to use steam inhalation, was recommended by 54% of the GPs.

Table 1: Medications prescribed by general practitioners for the treatment of common cold.

Medication Class	Frequency	Percentage
Cough medications	55	25.5
Antibiotics	40	18.5
Paracetamol/NSAIDs	32	14.8
First generation antihistamines	26	12.0
Lozenges	25	11.6
Antihistamine + decongestant	21	9.7
Vitamin C	5	2.3
Corticosteroids	5	2.3
Second generation antihistamines	4	1.9
Others (gargles, multivitamins)	3	1.4

There was a difference in charges between the clinics in the rural and urban areas as shown in Table 2. The average charge by the urban area clinics was higher, RM35.72±6.41 as compared to RM27.80±10.38 by the rural areas ($t=3.245$, $p<0.05$). Overall, the average cost was RM31.76±9.43. More than 50% of the GPs in the rural areas charged less than RM25 compared to none from the urban areas. Two GPs (4%) from both the urban and rural areas charged more than RM46. However, the highest and lowest charges, RM60 and RM17 respectively, were from rural clinics.

Information provided to the patient by the clinic assistants is shown in Table 3. Urban clinics provided more information to the simulated patient as compared to the rural clinics except for information on dose and frequency which was provided by all the clinics.

Table 2: Charges for the treatment of common cold in rural and urban area clinics

Charges (RM)	No. of clinics	
	Urban Clinic	Rural Clinic
≤ 25	0	14
26 – 30	8	5
31 – 35	7	1
36 – 40	4	2
41 – 45	4	1
≥ 46	2	2

Table 3: Information provided to the patient by clinic staff.

Information	No. of clinics (%)	
	Urban Clinic (n = 25)	Rural Clinic (n = 25)
Dose and frequency	25 (100)	25 (100)
Side effects	17 (68)	7 (28)
Not to take other medicines that can cause drowsiness	4 (16)	0
Non-pharmacological treatment	1 (4)	0
Advice to return if symptoms did not improve	0	0

DISCUSSION

A wide range of medications was prescribed and dispensed for the treatment of the cough and cold symptoms. A similar trend was reported by other studies,[9, 10] although the efficacy of some of these medications was doubtful. Most of the treatment consisted of expectorants, antitussives, antihistamines and mucolytics in various combinations.

NSAIDs and paracetamol were commonly given to treat symptoms of the common cold such as fever, body ache and sore throat.[11] A number of GPs (14.8%) in this study prescribed NSAIDs or paracetamol for these purposes. Paracetamol is relatively safe and is effective in relieving symptoms of the common cold. First generation antihistamines (12%) were more commonly prescribed than second generation (1.9%), probably because they were cheaper or because drowsiness caused by these drugs can aid the patient to sleep better.[12] Although some of the newer non-sedative antihistamines were used, it has also been previously reported that the second generation non-sedative antihistamines are ineffective in relieving cough.[1]

Most of the GPs (54%) also recommended nonpharmacological treatments. Drinking more water was the most common recommendation and was similar to the findings of Fisher et al.[13] Data is not shown, but more information such as directions on how to take the medications, drowsiness with antihistamines etc was provided by staff in the urban area clinics as compared to the rural areas. This could be due to the urban staff trying to meet the expectations of more educated patients in the urban areas.[14]

There was a significant difference in the charges for the treatment of common cold ($p<0.05$). Mean charge was higher in the urban areas (RM35.72) as compared to the rural areas (RM27.80). According to Kumar et al,[15] the differences in living standards and facilities could have affected the treatment cost of a disease. The overhead costs of the clinic such as rental and staff salaries are also expected to be higher in urban areas. The overall average charge for treatment of common cold in this study was RM31.76. Considering that the cost of treatment includes consultation and medication this is not an excessively high cost but neither is it cheap. As an indication of the cost of living in Malaysia, a BigMac costs RM7.95 (US$2.50). Cost can be influenced by the location, number of clinics in a particular area and the number of clinics surveyed.[16] Apart from costs, differences in perceptions of prescribing patterns between doctors in urban clinics and rural clinics has been observed in Australia. Doctors in rural clinics perceived that they tended to prescribe newer medicines that required less monitoring and that they were influenced by geographic location of where the patient lived.[17]

Although antibiotics made up only about 18% of the drugs prescribed, 80% of the GPs prescribed antibiotics for the patient. This was much

higher than the prescription of antibiotics by 18% of GPs in the United Kingdom[13] and the prescription of antibiotics for about 25% of the common cold cases in the United States.[18] The high prevalence (92%) of the use of antibiotics in the rural clinics found in this study and the possibility of greater availability of prescription drugs from non-regulated sources in rural areas[19] made this a potentially serious issue in the rational use of antibiotics and its implications on antibiotic resistance. Although it is known that the common cold is caused by a virus and that antibiotics are ineffective against viruses, the practice continues and is often an attempt to meet patient's expectations.[13] The use of antibiotics for the treatment of symptoms of cough and cold is strongly advised against especially with the increasing incidence of antimicrobial resistance.[5,8] The use of antibiotics for the prevention of complications of bacterial infections is only justified if they are given for the prophylaxis of rheumatic fever, recurrent ear infections or the presence of a bacterial infection.[3] There was no evidence of any of these indications in this study. Antibiotics should not be used for self-limiting conditions and should be reserved for life-threatening infections.[20] It has been reported by Cho et al,[21] that even though doctors and pharmacists knew the causes of common cold, the majority of them believed that antibiotics could prevent complications of common cold. However, in that same study, only 34% of parents believed that antibiotics could prevent the complications of common cold. Additionally, in this study, the patient was not asked if she was allergic to penicillin by any of the GPs and 30% of the antibiotics prescribed were penicillins. This could have potentially led to a severe and even fatal anaphylactic reaction.

Similarly, there is no rationale for the use of corticosteroids for the treatment of common cold. On the contrary, corticosteroids may impair the body's ability to combat the viral infection because of its immunosuppressive action. It is abundantly apparent that some kinds of guidelines are necessary for the use of antibiotics and other drugs in the treatment of common cold.[22]

The study had some limitations such as a relatively small sample size and nonrandomised selection. The primary consideration in selecting 50 clinics was that the task had to be completed within a specific period of time. The differences in cost may be due to the use of generic or proprietary drugs and this issue was not considered as it was assumed that both urban and rural clinics would equally use both generic and proprietary drugs. The clinical examination by the doctor may have been influenced by the prepared script of the "patient".

CONCLUSION

Medications prescribed for common cold in this study included antihistamines, paracetamol or NSAIDs, decongestants, antitussives and their combinations. Although treatment costs were higher in urban areas as compared to clinics in the rural areas, they were not excessively high. However, information provided by staff in the urban clinics was more comprehensive. The practice of prescribing antibiotics for the symptoms of common cold was still high among the GPs. Increased awareness concerning the dangers of the indiscriminate use of antibiotics, to counter possible unsubstantiated beliefs about their use in common cold, and periodic audits of antibiotic usage should be introduced.[23] If patients availed of symptomatic remedies from pharmacies in consultation with pharmacists, the unnecessary use of antibiotics by GPs could be avoided. It may also be time for a consensus on the treatment of common cold by all healthcare providers. General guidelines on the treatment of common cold should be adopted and made available to all healthcare providers.

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