Management of Children with Acute Respiratory infections (ARI) by General Practitioners in Multan - An Observational Study

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Abstract

knowledge, attitude and practices (K.A.P.) survey was conducted among doctors working as general practitioners (GP) in Multan, for diagnosis and management of acute respiratory infections (AR!) in children under five years of age. GPs in Multan were not familiar with national ARI control programme and rational drug use guidelines. They rarely asked about symptoms describing severity of disease while taking patient histories and did not look for signs of severe pneumonia during physical examinations. Most patients diagnosed as URTI (upper respiratory tract infection) received oral antibiotics and those with pneumonia received injectable antibiotics, Other drugs prescribed included cough syrups, antihistamines and antipyretics. The average number of drugs prescribed per patient was 3,4, The doctors were deficient in providing home care advice for sick children to the caretakers. Average time spent by doctors on each patient was two minutes and twenty-three seconds. A combination of biomedical and social factors help to perpetuate this irrational prescribing behaviour of the GPs. Continuing education program mes for doctors in general practice about AR! management in children and rational use of drugs and health education of the public may improve the current prescribing practices (JPMA 47:24, 1997).

Introduction

Acute respiratory infections (AR!) are one of the major causes of morbidity and mortality in developing countries. Children under five years may suffer from 5-8 attacks of ARI annually[1].. In Pakistan. children with A.RI constitute about one-third of the out-patient attendance for any doctor working in the community[2]. One-fourth to one-third of under-five mortality in developing countries has been shown to be attributable to AR! as an underlying or a contributing cause[3]. Most of these deaths are due to pneumonia and arc preventable with adequate antibio,tic treatment[4]. While many children with ART lack the benefit of essential antibiotic treatment, others are victims of indiscriminate and inappropriate use of antibiotics[5]. Research studies in Pakistan and other developing countries have shown that training of health personnel in the rational and effective management of ARI episodes can help to reduce mortalit due to ARI in the community[5,6].

ARI Control Programmes initiated by WHO are developing and promoting effective and rational management of ARI episodes in children by the health care personnel worldwide[5]. The National ART Control Programme in Pakistan has also started training of doctors in the management of ARI Studies of health facility utilization patterns in the country have shown that self-employed general practitioners (GPs) working in the community see and treat the larger segment of ARI patients[2,7-9], These GPs are registered doctors with MBBS (Bachelor of Medicine and Bachelor of Surgery') qualifications. They typically have small community- based walk-in clinics. Most clinics have dispensing corners where prescribed medicines are dispensed to patients in the form of tablets, powders and mixtures and

injections administered.
There is limited data available on health care practitioners KAP (knowledge, attitude and practice) regarding AR! management in children under five years of age[10,11]. We conducted this study to investigate the way in which GPs in Multan diagnosed and treated children under the age of five, presenting with ARI. The specific goals of the study were (1) to assess the knowledge and skills of the GPs regarding ART management, (2) to compare the way in which the doctors actually evaluated and treated children with standard case management guidelines. (3) To determine ways in which the National ARI Control Programme might intervene to promote effective and rational management of ARI episodes by the GPs.

Materials and Methods

Study area and subjects

Multan, located in south of Punjab, is a densely populated urban area housing about a million inhabitants. Population is largely middle to poor class. Children under five constitute about 15% of total population. Study subjects were GPs working in the city of Multan including its slums and suburbs.

Sampling

There was no pre-existing list available of all GPs working in the city. A tentative list of 132 names was prepared after obtaining infonnation from local medical association, professional colleagues and pharmaceutical companies.One hundred and ten of these GPs were personally visited by our research physician to enlist theirparticipation in the study. The remaining GPs were not available on contact. The GPs were told that our intention was to study symptom reporting in children with AR! presenting to the doctors (to minimise observation bias). Permission was asked for two research physicians to observe the doctor taking the history and examining the patients. All of these doctors who were contacted consented to participate in the study. Data collection was started in Januaiy, 1993, initially with those GPs who were considered to enjoy more busy practices by an estimate of waiting crowd in the clinic at the time of initial contact. By the end of March, 1993, winter had ended and the number of ARI patients dropped significantly. Then data had been collected about 69 GPs. As it was not feasible to continue the study longer or during the next ARI season, these 69 GPs by default became our study sample.

Standard Affi case management guidelines

The Pakistan National ARI Control Programme recommends standard case management based on WHO developed criteria for children with ART by the health personne[12] This protocol requires the doctor to ask a specific set of questions while taking the history and to perfonn specific physical examination (Table I).

Table I. Management of the child with cough or difficult breathing.

Assessment

Ask:

How old is the child?
Is the child coughing? For how long?
Is the child able to drink?
Has the young infant (age less than two months) stopped feeding well?
Has the child had fever? For how long?
Has the child had convulsions?

Look, Listen:

(Child must be calm)
Count the breaths in one minute.
Look for chest indrawing (esp. subcostal).
Look and listen for stridor.
Look and listen for wheeze. Is it recurrent?
See if the child is abnormally sleepy, or difficult to wake.
Feel for fever, or too cold (or measure temperature).
Check for clinically severe undernutrition.

The classification of severe pneumonia, pneumonia or cough and cold is made on the basis of the clinical findings (Table II).

Table II. ARI standard case management.

Age/Management	Clinical sign	Classification		
		No pneumonia (Cough or cold)	Pneumonia	Severe Pneumonia
02 months	Respiratory rate/min.	<60	N.A.	≥60
	Chest indrawing	Not present	N.A.	and/or present
2-12 months	Respiratory rate/min	<50	≥50	N.A.
	Chest indrawing	Not present	Not present	Present
12-60 months	Respiratory rate/min.	<40	≥40	N.A.
	Chest indrawing	Not present	Not present	Present
Management plan		Home care	Oral antibiotic + Home care	Urgent referral to hosp. after 1st dose of antibiotic

The case management piDlocol recommends hospitalisation of children suffering from very severe disease and severe pneumonia, oral antibiotics at home for children with pneumonia and no antibiotics for those with simple cough and cold. It also recommends to give specific home care advice pertaining to fluids, feeding, home remedies and warning signs of pneumonia to the caretakers of the patients treated at home (Table III).

Table III. Home care advice for mothers.

Increase fluids

* Increase breast feeding
* Offer the child extra to drink

Feed the child

* Feed the child during illness
* Increase feeding after illness
* Clear the nose if it interferes with feeding

Soothe the throat and relieve the cough with safe, simple remedies

Most important: Watch for signs of pneumonia

Bring child back quickly to health worker if:

* Breathing becomes difficult
* Breathing becomes fast
* Child is not able to drink
* Child becomes more sick

Measuring instruments

Keeping in view the standard case management guidelines, the following three measuring instruments were developed and pre- tested to study research questions.

1. An observational checklist for recording direct clinical observation of GPs while examining children in their clinics. Specific items included: presenting complaints described by the caretaker or asked by the doctor, clinical examination performed by the doctor, home care advice given by doctor and duration of doctor-patient interaction.

2. A semi-structured interview data collection instrument which recorded details of GP's clinical practice and his knowledge of important clinical features in patients suffering fmm ARI.

3. A self-administered questionnaire for the GPs asking about their patient management in different ART diseases.

Data collection

Two research physicians with experience in ART case management of children were hired for data collection. Clinical practice of each GP was observed fora session of two to four hours. All the children under five years of age presenting with ART to the doctor during this period were included in the study. The GP's clinical behaviour was recorded on observational checklist while he was examining the child. At the end of the consultation, they asked the GP about his diagnosis for the child and the treatment

prescribed. This was necessary as the GPs in Multan usually wrote their prescriptions in codes deciphered by employees who dispense the medicines accordingly. At the end of the session, the doctor was requested to answer a few questions (semi-structured interview) and to complete a written self-administered questionnaire.

Data analysis

All the datacollection forms were kept confidential. The data was coded and entered into the computer and later used for data analysis. The computer software used was Epi info 5.01. developed by the World Health Organisation. Geneva and Centre for Disease Control, Atlanta, USA.

Results

Sixty-nine GPs were included in the study. Number of ARI patients examined by each of them during the observation period varied from one to eight, data was collected for 255 doctor-patient encounters. The mean age of GPs 38±8 years (range, 28-60). They had obtained their medical qualifications from 3 to 34 years ago (median >10 years). The mean period for practicing clinical medicine was 8±8 years (range 1-33). Thirty-eight doctors (55%) worked fulltime in their clinics (morning and evening), while 3 1 (45%) were employed elsewhere in the morning hours and worked in their clinics during the evening only. Eighteen GPs (26%) also provided simple laboratory services, such as routine blood and urine examinations. Five GPs (7%) had admission facilities in their clinics. Their practice load varied considerably, by self reports they saw from 4 to 70 patients a day (median 20, mean24+4).

Comparison of reported knowledge/practice and observed practices of the GPs

Doctors' replies to the questionnaires represented reported knowledge/practice while data obtained from observational checklists revealed observed practices of the GPs. Points of importance with respect to the standard ARI case management protocol were compared. For the purposes of this comparative analysis, the first patient which came to the doctor during the observation session, if fulfilling the entty criteria, was selected. This makes the data in the reported and observed columns of following tables directly comparable as each doctor replying to the questionnaire about a specific problem/disease contributed only one observation while examining/treating a patient suffering from the same problem/disease.

Table IV. Patient history taking and examination of ARI. (n=66)

	Questionnaire		Observation	
	No.	%	No.	%
History taking*				
Cough	51	77	63	95
Fever	55	83	58	88
Difficult breathing	29	44	10	15
Difficulty in feed/drinking	15	23	9	14
Examination				
Chest auscultation	65	98	65	98
Respiratory rate count	17	26	0	0
Look for chest indrawing	7	11	4	6

*Asked or reported spontaneously by the caretaker of the child.

Table IV compares reported and observed clinical skills of the GPs. Most of them said and were observed to ask about fever and cough, but fewer asked about difficulty in breathing and ver few counted respiratory rates or looked for chest indrawing.

Table V. Treatment of cough and cold/No pneumonia (URTI). (n=23)

	Questionnaire		Observation	
	No.	%	No.	%
Drugs				
Injectable antibiotics	1	4	10	43
Oral antibiotics	17	74	19	83
Cough syrup	8	35	9	39
Antipyretics	9	39	19	83
Antihistamines	11	48	17	74
Home care advice				
Give fluids	0	0	0	0
Give milk/foods	2	9	5	22
Use home remedies	5	22	0	0
Watch for warning signs	0	0	1	4

Most depended on their stethoscopes during examination. Treatment and advice for 23 cough and cold doctor-patient encounters is shown in Thble V The majority of children were treated with oral and injectable antibiotics in addition tantipyretics and antihistamines. Very few patients were provided home care advice.

Tabel VI. Treatment of pneumonia. (n=28)

	Questionnaire		Observation	
	No.	%	No.	%
Drugs				
Injectable antibiotics	25	89	23	82
Oral antibiotics	11	39	19	68
Cough syrups	5	18	12	43
Antipyretics	5	18	22	79
Antihistamines	0	0	9	32
Home care advice				
Give fluids	2	7	2	7
Give milk/foods	3	11	3	11
Use home remedies	4	14	2	7
Watch for warning signs	1	4	2	7

Table VI compares treatment and home care advice forpatients withpneumonia. Most were prescribed antibiotic injections and there was marked variation between reported and observed prescribing practices.

Drugs and duration

Number of drugs prescribed per patient ranged from none to seven, with a median of 3.0 (mean=3.4+1.0). In 156 encounters, time of patient-doctor interaction was recorded. It ranged from ten seconds to six minutes, with a median of 2.0 minutes (mean=2.23+1 .43 minutes with seconds).

Discusssion

This study serves as a baseline survey of ARI Inanagement by the GPs in Multan. Observations indicate that the usual clinical practices of the GPs in Multandifferfrom the standard ARI case managetnent guidelines. There appear to be multiple reasons behind this prescribing behaviour of the doctors. Most of the GPs in the city were not familiar with the recent developlnents in the ARI case management. There was no formal training programme for the continuing education of doctors in general practice. Only two GPs in our sample, had attended the recently starfed ARI case management training courses. This lack of appropriate knowledge and skills is probably the major factor behind inappropriate management of ARI cases. But in addition, the difference between reported and observed

practice among GPs could be due to social, financial and time constraints.

From a sociological view, a low level of general literacy in Pakistan and kick of health education has led to misconceptions about drug use and its benefits. It is a common belief that taking medicines improves the health of both the sick and the healthy people. Multiple drugs are considered better than single. Injections are expected and perceived as more effective than oral drugs[11]. Such beliefs are reinforced by the very large number of unqualified and unregistered practitioners practicing medicine all over Pakistan. The doctors' prescribing practices are also influenced by this public attitude towards drugs. The parents are satisfied by the doctors' mere use of stethoscope, believing that their child has been adequately examined[13]. Similarly, an injection and a bottle of medicine makes them believe that they are getting proper treatment. Overall, doctor is considered as a provider of medicine and not someone who gives medical advice[11]. These prescribing practices persist because they seem to satisfy the needs of both the patient and the doctor[14,15].

Economic factors play a role because the doctors running general practice clinics are not prepared to risk any treatment failure for fear of losing their patients. Competitive business makes themfeel constrained to accede to the patient's desire of an immediate improvement in his symptoms and early recovery. As a result, they excessively use antibiotics and other symptomatic relief drugs such as cough remedies and antipyretics. The clinics of sonic of the GPs were crowded with a large number of patients waiting for them. The patients were coming to the doctor's table one by one as he was hurriedly writing prescriptions for them. This situation did not allow the doctor to talk to the patients or even to do an adequate physical examination. Froni previous experience. patients also expect the doctor to provide medicines, not just a consultation[11].

A more recent country-wide survey involving government physicians has also brought, out unnecessary antibiotic use and lack of communication between the doctors and the child caretakers[16]. Similar prescribing behaviour of the doctors seems to be widely prevalent in other countries of the region[2,15] and in rest of the developing world[17-19], A study of drug utilization pattern in Sri Lanka showed that average number of drugs per consultation was 3.4[15]. A survey in Indonesia has shown that 85% of the ARI patients seen by general practitioners and pediatricians were prescribed antibiotics and on an average. 3.5 drugs were prescribed per patient[17]. A WHO study on rational use of drugs in 12 developing countries of Asia, Africa and Latin America showed that the average number of drugs per prescription in different countries was 1.3 to 2.2. The same study revealed that the avenge time given by the doctor to each of the patients in these countries varied from 1.0 to 6.3 minutes[18].

A number of strategies have been suggested and applied with variable amount of success to effect a change in physicians[19] practices[20,21]. Generally, educational methods have been more successful as compared to the administrative and regulatoiy measures[20]. If the subjects are deficient in knowledge and skills are needed, teaching and training of the requisite skills would be necessary. If significant knowledge and required skills are there with lack of adequate performance, bringing changes in work environment facilitating the appropriate behaviours would be required[22]. Any simplified model would be inadequate to explain the observed prescribing behaviour of the GPs in our study. More research is needed to understand the interplay of economic, social and cultural forces which promote non-scientific prescribing behaviour of the health providers[23]. There is a need of educational programmes for the doctors with emphasis on rational prescribing and better communication with the patients. This educational process is best started during the undergraduate training years[24]. At the same time, continuing education programmes for the doctors would be needed. Any measures taken to change the prescribing behaviour of the GPs should be planned in consultation with them[20,25]. In addition, parents and caretakers of children need to be made more infonued about the dangers of excessive and unnecessary usage of drugs, so that an environment of demand can be generated for more rational

prescribing by the doctors[11].

Acknowledgement

Financial support for this research was provided by the Applied Diarrhoeal Disease Research Project at Harvard University by means of a Cooperative Agreement with the United States Agency for International Development (USAID).

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