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A comparative study on the priscription practises of antibiotics in cold (ari) in patients under the age of 15 years and reasons of priscription in different hospitals of pakitan

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Abstract – The present study was conducted to compare the prescribing practices of antibiotics in common cold (ARI) in patients under the age of five years in PIMS and FGSH in Islamabad Pakistan. A cross sectional comparative study was conducted in two hospitals of Islamabad Pakistan i.e. Pakistan Institute of Medical Sciences and Federal Government Services Hospital. During the period of March and April 200 prescriptions were collected out of which 100 were from Pakistan Institute of Medical Sciences and 100 from Federal Government Services hospital, to check among the most commonly prescribe combination of drugs in ARI. The data was collected by using two separate data collection tools for qualitative and quantitative data. For qualitative data an in-depth interview guide was used. For data analysis 16th version of SPSS was used.

Keywords – Antibiotics, Common cold, Prescriptions, Data analysis by SPSS

1. Introduction

Common cold is among the most prevalent diseases affecting upper respiratory tract. It is basically a viral infection producing symptoms which are self limiting.[1] Children are in more danger to be affected with common cold. Children may have 6 to 10 attacks of common cold per year and adults may counteract 2 to 4 attacks annually. Comparative analysis suggests that approximately 23 million people lost their work days and 26 million students missed their school days annually due to common cold. Even there is a marked number of those people who work with lesser efficiency because of uncomfort created by the symptoms of the common cold. Common cold is highly prevalent with milder illness conditions and mortality rate is rare. How ever, common cold in patients with asthma or pre-existing obstructive lung disease may aggravate the symptoms. The patients suffering from the common cold are in high risk to prone from otitis media and sinusitis [3, 5]. Common cold is more frequent in early spring particularly at the start of April and continues till May. Usually corona virus infection occurs in summer and again in autumn to early winter. It has been found that approximately 30% of upper respiratory tract infections are due to corona virus[1]. The pattern of infection caused by RSV(respiratory sensitial virus) is more or less similar to infection caused by rhinovirus.[2] The isolation of influenza virus from patients with cold like symptoms is indicative of mild influenza illness and the incidence is expected to follow trends in influenza illness within a community. Para influenza virus type 3 is present in summer months and is associated with annual outbreaks or epidemics. Isolation of adenovirus is fairly constant throughout the year [4,6]:

2. Methodology

A cross sectional comparative study was conducted in two hospitals of Islamabad Pakistan i.e. Pakistan Institute of Medical Sciences and Federal Government Services Hospital. During the period of March and April the data was collected by using two separate data collection tools for qualitative and quantitative data. For qualitative data an in-depth interview guide was used. The interview guide was designed after consulting with teacher and guide line given in rational drug use module i.e. learning about drug use problem after designing the in depth interview was pilot tested to check its acceptability. After successful pilot testing it was used to conduct interview the number of interviews to be conducted was decide by consulting with teacher and guidelines given in session guide i.e. learning about drug use problem. The minimum of 5-10 interviews were sufficient for homogenous group. And the interviews were stopped where the saturation point comes. A saturation point was a point where same answers were starts coming from different respondent. Also the data was collected from Out Patient department of Children Hospital Pakistan Institute of Medical Sciences.

Similarly in-depth interviews were conducted in Federal Government services Hospital. The data was collected from Out Patient Department of paediatric Department of Federal Government Services Hospital. The qualitative data was analyzed by making variables in Statistical Package for Social sciences Version 16.

3. Results

Out of the 200 prescriptions 100 from Pakistan Institute of Medical Sciences and 100 from Federal Government Services hospital, to check among the most commonly prescribed combinations of drugs in ARI fewer than 5, the prescribed drug was NSAID, antihistamine and antibiotic. From NSAID paracatamol from antihistamine chlorpheneramine and from antibiotic Amoxil, Erythromycin, Co trimoxazole were prescribed. The percentages of these combinations are shown in Fig-1. The percentage of different classes of antibiotics that were used are shown in Fig-2 and Fig-3 respectively.

The commonly prescribe dosage form was Syrup and Suspension and percentages of prescribed dosage form was 100% Syrup in PIMS and while in FGSH 81% Syrup and 19% Suspension were used shown in Fig-3.

The calculated mean for number of drug per prescription were 3 in the 2 selected facilities and mean for number of antibiotic was 1. The percentages for knowing the common reason of ARI are shown in Fig-5 and percentages for identifying the reason for prescribing also shown in Fig-6.

For knowing the prevalence of ARI among 80% prescribers thought that ARI is common and 20% thought that ARI is very common. Among the prescribers 80% carries MBBS+ qualification while 20% were MBBS.

4. Discussions

This study was conducted in two selected facilities by collecting qualitative and quantitative data. From the result of qualitative data we came to know that viruses are responsible about 70% ARIs problems and 20% ARI problems are due to malnutrition and poor hygienic condition and 10% problems are due to allergen and viral combinations but there are some bacterial strains which are responsible for ARI but none of the prescriber during interview found to be think that bacteria could be the cause of ARI. Surprisingly all of them were found to be prescribing antibiotics in ARI under the age of 5.

There is a huge gap among the opinion and practices of doctors according to their opinion 70% of ARI problem were viral but according to their practices all of them could be treated with antibiotic as they prescribe antibiotic in all patients. There could be a many different reasons for such kind of practices but according to this study such practices are due to non-serious behaviour of doctors, lack of knowledge, inadequate competency in diagnosis of ARIs. When during interview asked that “is it hard to diagnose ARI” 100% of them replied No this indicates that they take diagnosis of ARI quite easy.

By using qualitative tool we try to identify the reason of prescribing antibiotic was found to be according to 40% of doctors antibiotics were prescribed when fever is greater than 3 days and about 30% of doctors thought that antibiotic should be prescribe when there is persistent fever and remaining 30% were thought that antibiotic were prescribed to prevent secondary infection.

As in the opinion of 40% doctors the antibiotics were prescribe to treat fever of greater than 3 days, but actually fever is protective response in ARI and there is no role of antibiotic in reducing fever, so antibiotics were irrational prescribe to treat fever of greater than 3 days or persistent fever, this irrational prescribing practices of antibiotic result in loss of limited budget in health facilities in countries like Pakistan, for fever we can use NSAID paracatamol which is much more cost effective than prescribed antibiotic. And 30% of physicians were thought that antibiotic are prescribed in order to prevent secondary infection from study review it was came to know that there is no role of antibiotic in common cold currently established so antibiotics are irrationally prescribed result in emergence of antibiotic resistance and loss of limited recourses from qualitative tool it was also found that there was no significant differences among the practices of specialist and training the practices were found to be almost same this indicates that trainees follows the practices of senior specialist so there is an immediate need of training program to train the senior specialist about ARI treatment practices. In this study we were also able to collect quantitative data, from quantitative data we were able to found that most commonly prescribe combination of drugs in ARI treatment in these to selected facilities, among the prescribe combination (NSAID + Antihistamine) were found to be prescribed in 10% of patient and 2nd combination used was (Antibiotic + NSAID + Antihistamine) were found to be prescribe in 35% of patients and 3rd combination was used (Antititussive + NSAID + Antihistamine) were found to be prescribe in 55% of patients. This therapy was used to symptomatic relief of common cold as common cold (ARI) is a viral infection so antibodies are produced in human body against viruses, the use of NSAID specially paracatamol suppress the development of antibodies and prolong the viral shedding. These agent reduce fever that may be protective response to infection, these agents should not be used routinely for common cold this may lead to economic loss. From the quantitative data we were also able to know that commonly prescribed losses of antibiotic, these classes are penicillin, cephalosporin, macrolide and sulphonamides. In these two selected facilities among the drug form these classes amoxicillin from penicillin erythromycin from macrolide and co-trimoxazole from sulphonamide was found to be most widely prescribe antibiotic among 56% of patients were found to be prescribed amoxicillin in PIMS and 22% cephalosporin and 15% macrolide and 7% co-trimoxazole were found to be prescribed while in FGSH in was found that 39% of patients were prescribed co-trimoxazole and 33% of amoxicillin and 16% erythromycin and 6% were found to be prescribed cephalosporin. From the review of studies it was came to know that beta lactamase antibiotic and co-trimoxazole was found to be resistant in 2000, but these antibiotics are still widely prescribed in these to selected facilities of Islamabad Pakistan, so prescribing resistant antibiotic in children under 5 is of no use and result in limited resources of healthcare system. From quantitative data we were also able to know that the average number of drugs prescribed per patient found to be 3 and number of antibiotics were found to be prescribed

1 antibiotic per prescription, so this indicates that antibiotics were found to be prescribed in 100%cases of ARI,

This study indicates that irrational practices of ARI in these selected facilities as this study design was comparative cross-sectional study so there are some limitations of this study design as cross-sectional studies were conducted in short period of time, so better result can be obtain by interventional type of studies are longititutal type of studies in collaboration of governmental and non-governmental organizations or with collaboration of some academic institutions. Better results can be obtained and this may lead to improve prescribing practices of ARI.

5. Conclusion

The result of this study indicate irrational prescribing practices of ARI in children under 5 years in these two selected facilities so there is an immediate need of educational intervention along with several follow ups, in collaboration with W.H.O and some other NGO's and government in order to improve the practice of ARI.

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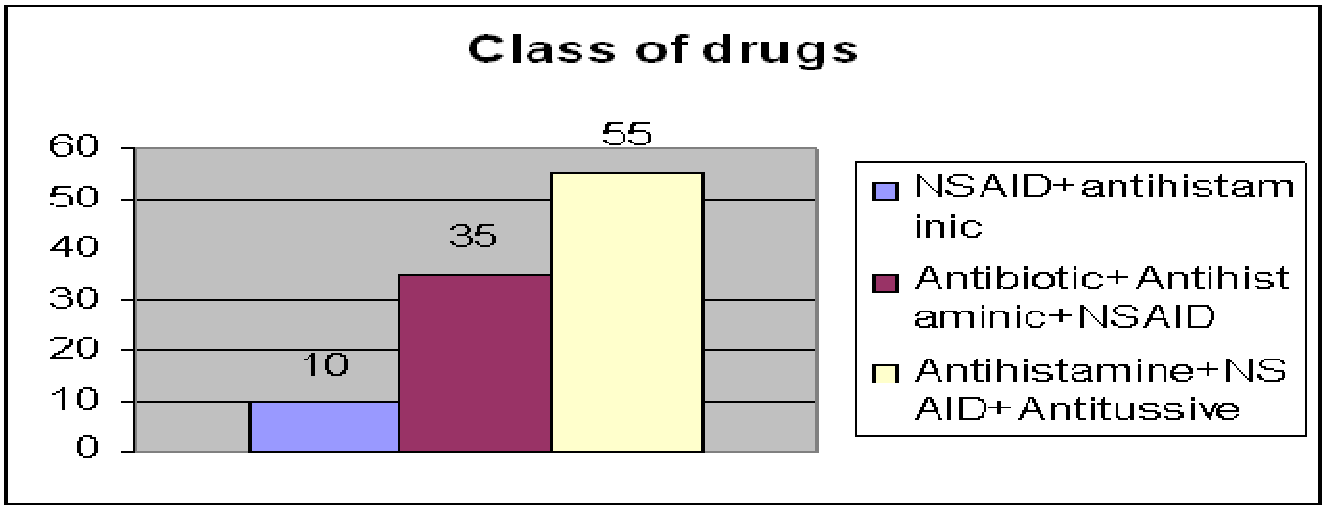

Fig-1. Commonly prescribed drugs in common cold

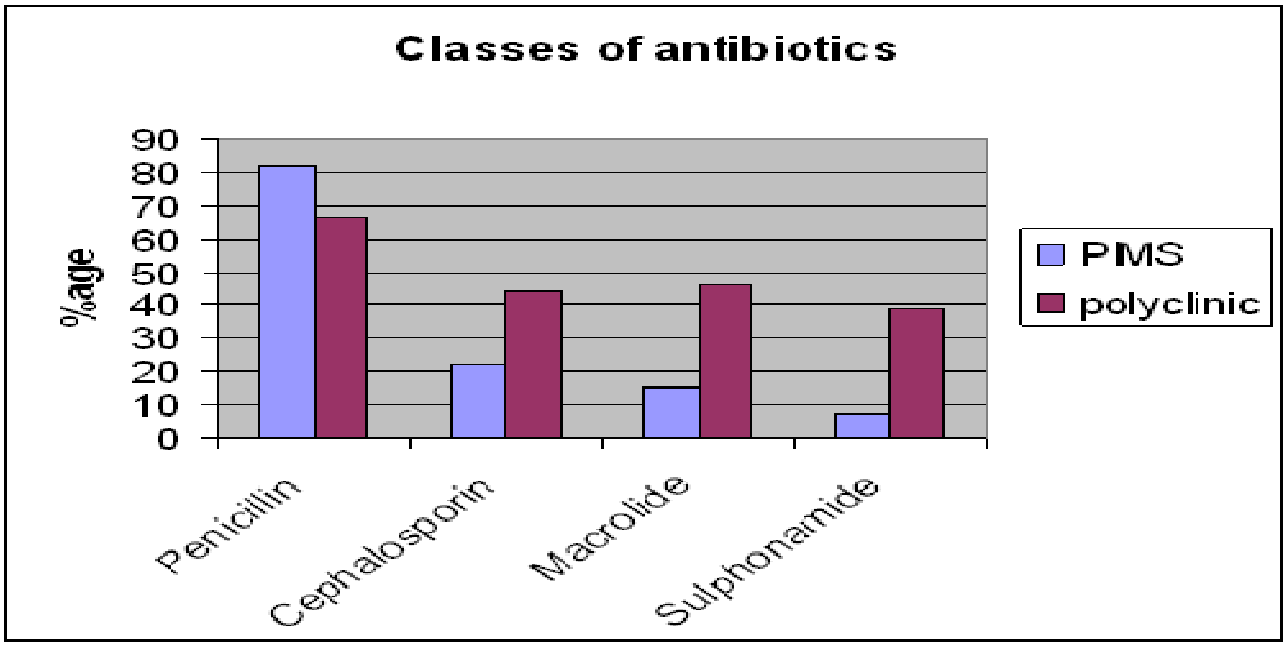

Fig-2. Most commonly prescribed antibiotics in common colds

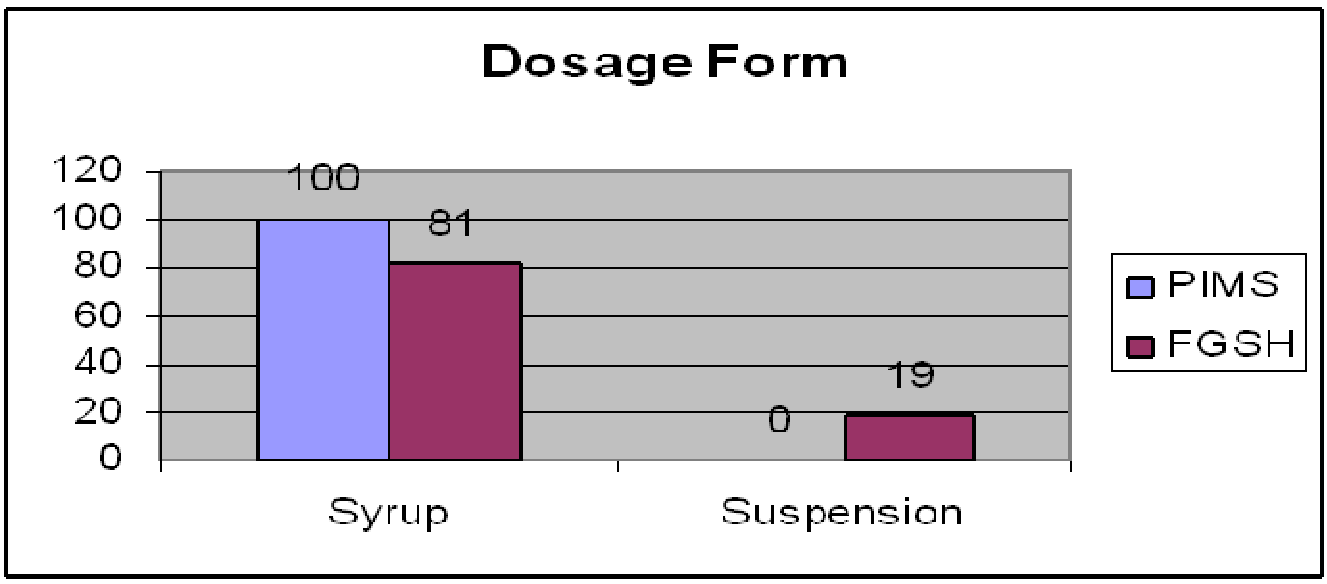

Fig-3. Commonly prescribed dosage form in prescription

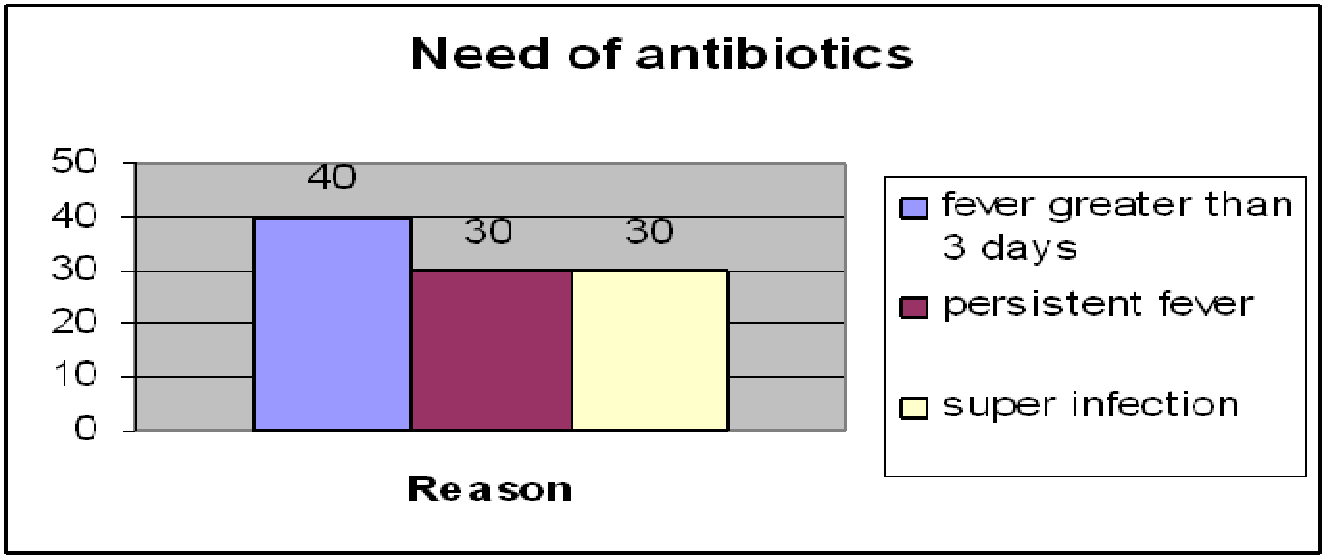

Fig-4. Reasons for prescribing antibiotics

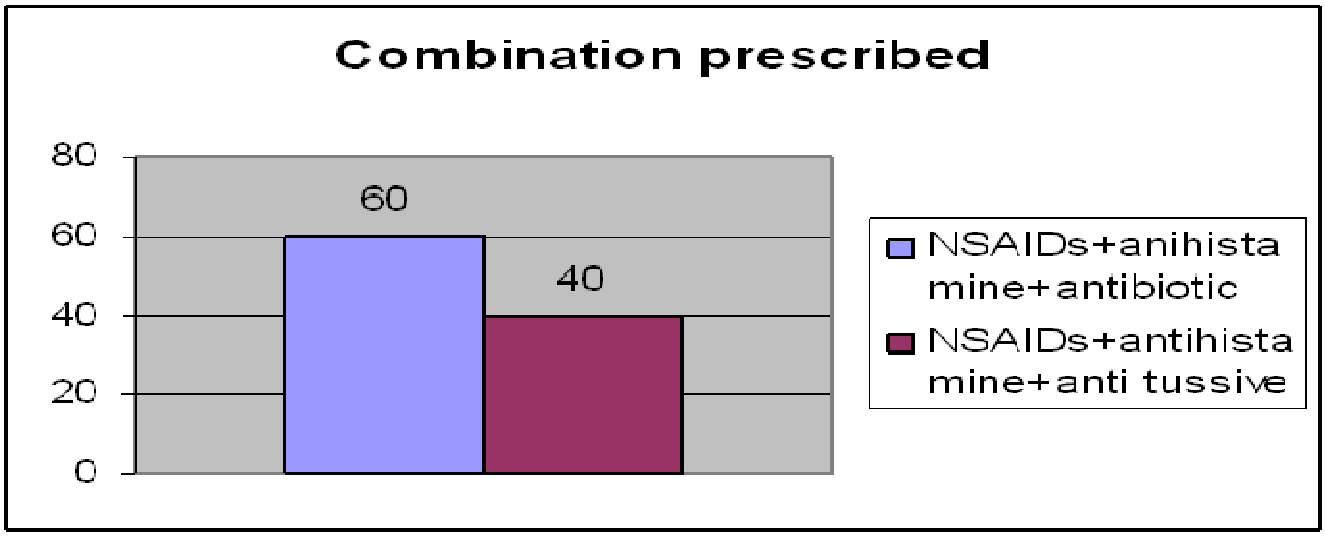

Fig-5. Comparison of commonly prescribed medications in combination

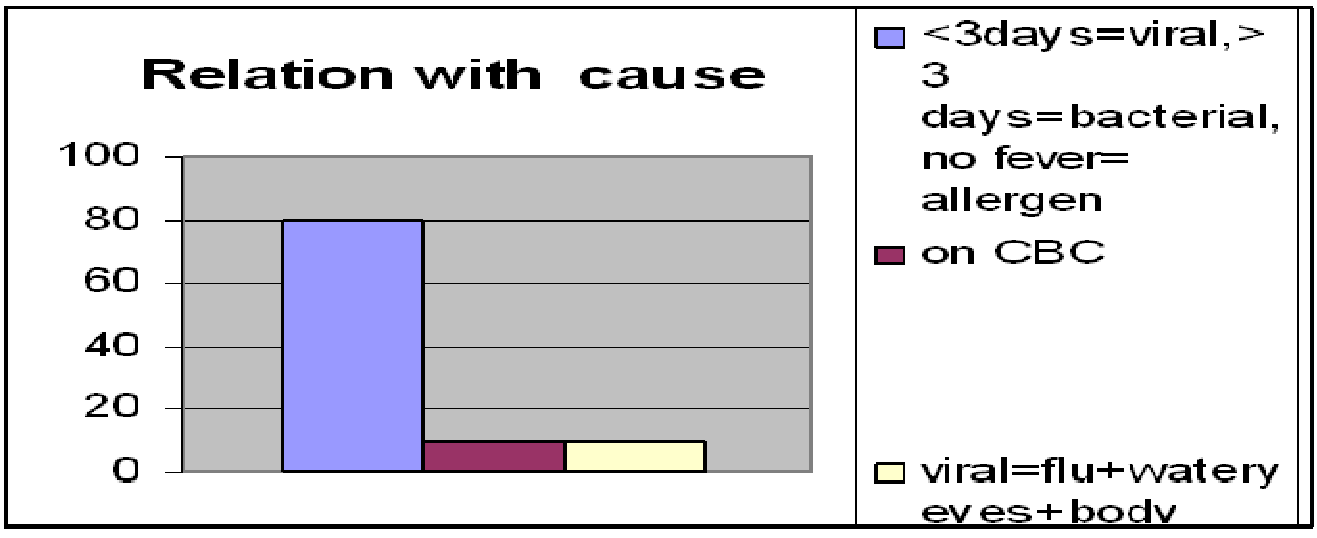

Fig-6. Etiology and symptoms of common cold

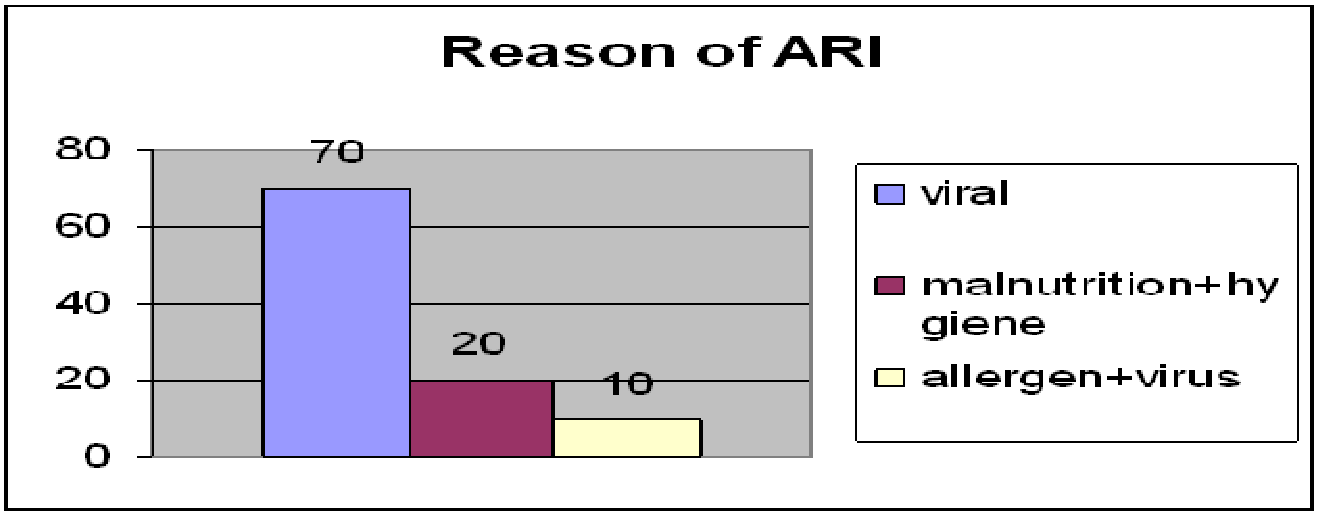

Fig-7. Agents causing ARI

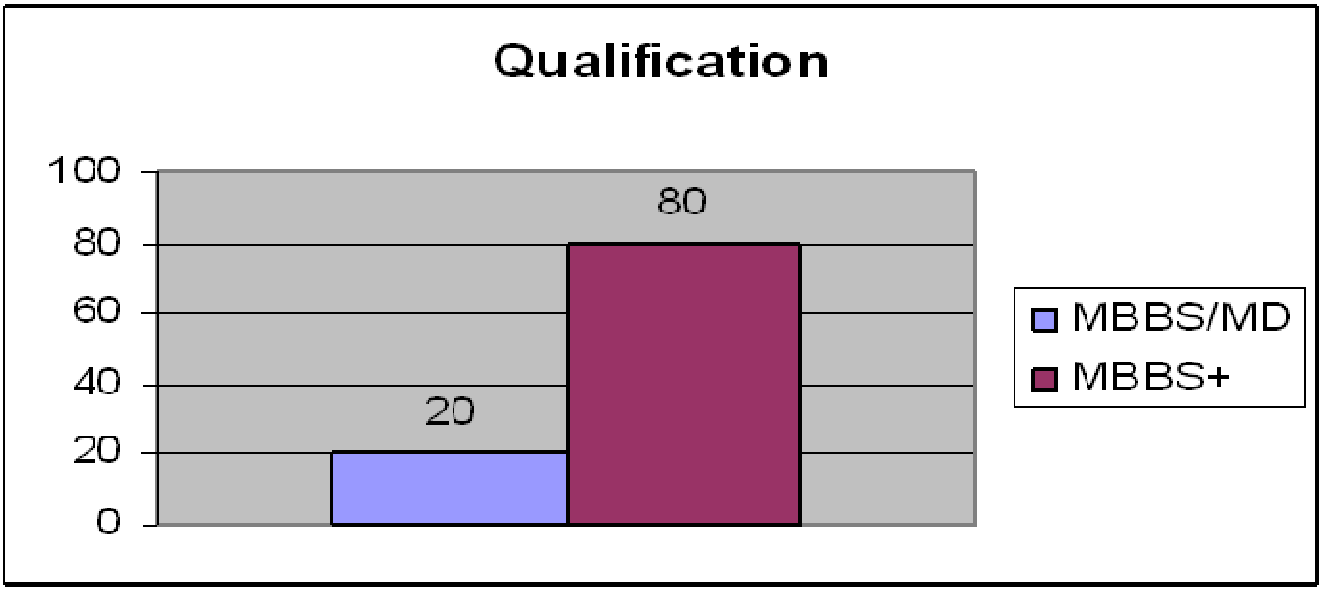

Fig-8. Qualification of Prescribers