

Original Article

APPRAISAL OF GENERAL PRACTITIONERS IN THE MANAGEMENT OF ACUTE WATERY DIARRHEA FOR CHILDREN UNDER 5 YEARS OF AGE

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Objective: To appraise general practitioners in the management of acute watery diarrhea for children under 5 years of age and to identify various factors contributing to current practices of general practitioners for the case management of diarrhea.

Material & Methods: This cross-sectional descriptive study was conducted on 380 general practitioners (GPs) selected through simple random sampling from the list of GPs working in the private sector of Lahore city. Their knowledge and practices regarding management of AWD for the children under 5 years of age was determined by using semi structured questionnaire and data was analyzed using SPSS version 16.0.

Results: Of the 380 GPs working in the private sector of Lahore city, 339 (89%) were males and 41 (11%) were females. GPs with MBBS only prescribed 2.3 ± 1.6 drugs /prescription whereas pediatricians with minor diploma prescribed 1.9 ± 1.6 drugs/prescription. A statistically significant difference was observed between qualification of GPs, experience as GPs, knowledge regarding WHO guidelines, attending courses at DTU and their prescribing trend for ORS, antimicrobials and anti-diarrheals, and zinc.

Conclusion: The dearth in the knowledge of GPs pertaining to the latest protocols elaborated by WHO and UNICEF has unearthed a dire need for their continuous medical education under the stewardship of the Government of Pakistan by allocating essential resources to update the information level of GPs catering medical services for almost 80% of community.

Keywords: General Practitioners, Continuous Medical Education, Integrated Management of Childhood Illness, Children under 5 years of age.

Introduction

Diarrheal disorders in childhood account for a large proportion (18%) of childhood deaths, with an estimated 1.8 million deaths per year globally. The World Health Organization (WHO) suspects that there are more than 700 million episodes of diarrhea annually in children under 5 years of age in developing countries.¹ While global mortality may be declining, the overall incidence of diarrhea remains unchanged at about 3.2 episodes per child year. Even in developed countries like U.S.A, there are 1.5 million outpatient visits for gastroenteritis, 200,000 hospitalizations, and 300 deaths annually. Globally, it was estimated in 1999 that Shigella infections may lead to 600,000 deaths per year of children under 5 years of age, a quarter to a third of all diarrhea related mortality in this age group.² Although most cases only require supportive management and are self limited, diarrheal diseases remain the fifth leading cause of death among the global population.³ According to the USAID Micronutrient Program, 11 million child deaths occur each year, two thirds of these are preventable, with widespread use of oral rehydration salt (ORS)

and Zinc supplementation for diarrhea treatment; and many lives can be saved if these advances are used in conjunction with effective management both in the home and the health facility.⁴ Repeated attacks of diarrhea lead to under nutrition and poor growth because of reduced food intake (owing to anorexia and withholding food), mal-absorption of nutrients and increased nutrient requirements. The major cause of death in diarrhea is dehydration which is associated more with the acute watery diarrhea (AWD) than the chronic or recurrent diarrhea. In Pakistan, under 5 mortality rate is 100/1000 live births and deaths due to diarrheal diseases among children under 5 years is 14% of total deaths in this age group, whereas in the Eastern Mediterranean region (EMRO), average is 15%.⁵ As far as top ten causes of death in all ages in Pakistan is concerned, death due to diarrheal diseases is 118/1000 (9%) and years of life lost are 12%.⁶ This gives the indication not only of the high incidence of the disease but also the poor management of diarrhea in the country.

This study was carried out to appraise the GPs in the management of acute watery diarrhea for children under 5 years of age at Lahore city, Punjab

Pakistan. The knowledge and practices of general practitioners in the case management of acute watery diarrhea for such age group according to WHO guideline was estimated through interviews by the researcher and observations were assessed in the light of standard protocols elaborated by WHO.¹⁰

Material & Methods

This was a cross-sectional analytical study was conducted at Lahore city between 12th March, 2009 and November, 2009. The study population comprised of the General Practitioners working in the private clinics in the Lahore city and sampling frame comprised of a list of GPs working in the Lahore city. Sampling unit was a GP working in the private setting of this city. A sample size of 380 GPs was calculated according to the data available. List of GPs working in the private set up was procured through the courtesy of Pakistan Academy of Family Physicians, Lahore Pakistan and Pakistan Medical Association (PMA), Lahore and the number of GPs included in the universe was 3000. As the study intended to appraise the GPs in the management of AWD for the U5, therefore, the sample size was calculated using the formula for estimating a proportion. Simple random sampling (SRS) technique was used. Only qualified GPs working in the Lahore city, providing medical care in private sector as family physicians were included.

Data was collected using a semi structured questionnaire and entered for analysis into the computer using the SPSS version 16.0. Data was analyzed for description i.e. for continuous variables like experience, mean \pm standard deviation (SD); and for categorical variables, frequencies and percentages were calculated. Chi-square or Fisher's exact test was used to estimate associations and significant differences between categorical independent and outcome variables. Alpha level of 5% ($p = 0.05$) was used for significance testing and associations.

Results

Of the 380 GPs working in the private sector at Lahore city, 339 (89%) were males and 41 (11%) were females. GPs with MBBS only prescribed 2.3 ± 1.6 drugs /prescription whereas pediatricians with minor diploma prescribed 1.9 ± 1.6 drugs/prescription. Experience of GPs ranged from less than one to more than 20 years. 213 (56.1%) of GPs worked in a pediatric unit while only 130 (34.2%) attended diarrhea management training

course. Overwhelming majority i.e. 356 (93.8%) never attended such workshops. Only 103 (27%) GPs had read WHO/ UNICEF criteria for proper management of AWD. The response of children toward ORS revealed that only 153 (40.3%) of GPs stated that children liked to take it. Drugs prescribing trend depicted that 276 (77.7%) of GPs would prescribe antimicrobial drugs and 144 (37.9%) GPs would recommend anti-diarrheal drugs; out of them, 44 (30.6%) would recommend it to every patient and 100 (69.4%) recommended such drugs occasionally. 120 (31.6%) GPs would prescribe I/V fluids in moderate to severe dehydration, while 116 (30.5%) considered excessive vomiting and diarrhea as an indication for this therapy. Overwhelming majority of GPs i.e. 362 (95.2%) would refer seriously dehydrated cases to government hospitals and only 6 (1.6%) would refer such cases to consultants to get appropriate management. 266 (70%) GPs recommended home made fluids in case of AWD in U5 children. 160 (42.1%) GPs had belief in the role of micronutrients in the management of acute watery diarrhea and out of them only 25 (15.6%) GPs knew the role of zinc in the management of AWD. It was seen that 191 (50.3%) GPs would recommend continuing feeding milk only, while 83 (21.8%) recommended feeding semi-solids plus fluids including milk, whereas, 66 (17.4%) would like to add fluids with milk and only 40 (10.5%) advised solids, semi-solids plus milk in such cases. 268 (70.5%) GPs were visited by a medical representative and 165 (61.6%) deposed that there is no effect on the prescription rate for a particular drug while 75 (28%) stated in favor of increased prescription rate for a certain drug and 28 (10.4%) GPs mentioned about decreased prescription rate. 300 (78.9%) GPs would use to advise their patients for washing hands before and after taking or serving food, 322 (84.7%) GPs educated their clients to use boiled water for drinking and 248 (65.2%) GPs would use advise the parents of sick children to use cooked food. A statistically significant difference was observed between qualification of GPs, experience as GPs, knowledge regarding WHO guidelines, attendance of a course at DTU and their prescribing trend for ORS, antimicrobials, anti-diarrheals, and zinc.

Discussion

It was revealed from data that additional post graduate qualification attained by the GPs either in the form of minor or major diplomas in the field of pediatrics invariably has its positive impact on the better and precise case management for the children.

Table-1: Characteristics of respondents.

Medical Qualification	Males (n %)	Females (n %)	Total (n %)
MBBS / MD	268 (79.0%)	37 (90.02)	305 (80.3)
MBBS ± Minor Diploma in pediatrics	07 (2.0%)	-	07 (1.8)
Others	64 (19.0%)	04 (9.8)	68 (17.9)
Total	339 (100.0)	41 (100)	380 (100)

Table-2: Experience of GPs in pediatric units, trainings at DMTU, attended workshops on diarrhea management, knowledge regarding WHO criteria, management according to WHO plan.

Work experience	Males n %	Females n %	Total n %
Yes	207 (61.1)	06 (14.6)	213 (56.1)
No	132 (38.9)	35 (85.4)	167 (43.9)
Total	339 (89)	41 (11)	380 (100.0)
Training			
Yes	116 (30.6)	14 (3.7)	130 (34.3)
No	223 (58.6)	27 (7.1)	250 (65.7)
Total	339 (89.2)	41 (10.8)	380 (100)

Table-3: Frequency distribution of drugs recommending practices by Gps.

Recommended Drugs	Yes	No	Total
Antimicrobial	296 (77.7)	84 (22.3)	380 (100)
Antidiarrheal	144 (37.9)	236 (62.1)	380 (100)

Table-4: Frequency distribution of GPs by their belief in the role of micro-nutrients (zinc) in the management of AWD.

Role of micro-nutrients	No. / %
Yes	160 (42.1)
No	220 (57.9)
Total	380 (100)

Table-5: Frequency distribution of GPs recommending various types of feeding to the parents for their children during AWD.

Feeding Recommendation	No. / %
Milk only	191 (50.3)
Fluids + Milk	66 (17.4)
Semisolids + fluids including milk	83 (21.8)
Solids+semisolids+fluids including milk	40 (10.5)
Total	380 (100)

*Feeding recommendations: For the age < 6 months (sr.no. 1 & 2

applicable) and > 6 m as weaning starts (sr.no.1-5 applicable)

However, this study showed a statistically significant qualification and prescription for anti diarrhea drugs and zinc was found statistically significant. Similar observations were made by Alam et al where GPs having major diploma in pediatrics prescribed less drugs as compared to those with minor diploma in pediatrics.¹¹ To estimate impact of experience and postgraduate qualification profile of GPs on their practicing behavior, in a study by Baqui et al about drug prescribing practices of general practitioners and paediatricians for childhood diarrhea, the results indicated inadequate prescription of ORS and excessive prescription of antibacterials, antidiarrheals and antiamebics by GPs. Intervention strategies need to be planned to improve the prescribing practices of both groups.¹²

Similarly, another study conducted in Kerman, Iran by Seddique et al showed no significant difference between physician's knowledge and their educational/practice level but there was a significant difference based on years of working experience (less than 16 years) ($p < 0.001$) with knowledge.¹³ In order to ascertain the impact of training programs attended by GPs on the management of diarrhea at Diarrhea Management Training Units (DTUs), a retrospective review of cases seen in the Diarrhea Treatment and Training Unit (DTU) of Bangalore (India) confirmed the efficacy of the standard case management

approach and this strategy entailed importance of oral rehydration therapy (ORT), continued feeding, and selective use of intravenous fluids and antibiotics.¹⁴ To appraise the current practices among the doctors working at filter clinics and diagnostic centers in Lahore city regarding the management of acute watery diarrhea (AWD) in children, one study showed that 94% doctors prescribed ORS in childhood diarrhea; I/V fluids were prescribed by 40% doctors and 86% would administer drugs. Although these findings are not consistent with our study, the only similarity is inclusion of ORS as an important variable for the management of such cases although the prescription rate for ORS in our study was surprisingly low i.e. only 29% of GPs would prescribe ORS for 90% of children as compared with 94% in the study under discussion. Similarly, only 6% of GPs would prescribe IV fluids for 90% of cases with moderate to severe dehydration and 9% of GPs would prescribe drugs for 90% of children in our study. It was concluded that although many doctors are familiar with WHO guidelines for management of childhood diarrhea, most of them are not following the recommendations in true letter and spirit.¹⁵ As shown in a study by Oingwen W et al regarding management modalities of diarrhea, three grade health education models for the training of health workers and caretakers was developed to improve the knowledge, attitude and practice in diarrhea disease. It showed that rate of ORS use was increased; the rate of IV use, antibiotic and antidiarrheal drug use was decreased obviously. The difference was statistically significant ($p < 0.05$).¹⁶ Analysis of results pertaining to prescription of ORS by GPs and different factors studied showed that there was a statistically insignificant difference between prescribing trend of GPs and their medical qualification. A statistically significant association was found between the year of graduation, the experience of in child care and knowledge about WHO guide lines for the management of diarrhea, while no statistically significant association was seen between GPs prescribing ORS and their working experience in a pediatric unit. In order to assess knowledge of diarrhea management by GPs, a study by Patwari et al showed that 91% of GPs were prescribing ORS in various combinations, but only 9.8% were advising ORS and feeding as standard management of diarrhea.¹⁷ The findings of our study are consistent with the study conducted by Nizami S et al which depicted that inconsistencies exist in stated attitudes of health

professionals toward prescribing antispasmodics and anti-motility agents and their actual prescribing behavior.¹⁸

A double-blind placebo-controlled study was designed by Strand TA et al to evaluate the effects of zinc supplementation on the clinical course and duration of diarrhea in malnourished Turkish children. The mean duration of diarrhea was shorter and the percentage of children with consistent diarrhea for more than 3-7 days was lower in the study subgroups than in the control subgroups.¹⁹

One of the limitations of this study is that it was carried out on a particular segment of physicians in a large urban location; therefore caution needs to be exercised in generalizing results towards the population at large. The sample size of 380 was smaller when it is compared to other studies carried out on general physicians in the management of AWD for U5 age group in some other countries owing to the limitation of resources at our disposal. Researcher did not carry out diagnostic tests to quantify some variables of incumbent study as done by many investigators in other countries that would have alluded to the levels of our own private set up in the country but such analysis remains controversial as the study variables were destined to evaluate the knowledge and practices of GPs particularly by targeting their technical skills.

Conclusion

On the basis of the results of study, it can be concluded that there are gaps in the knowledge and practices of GPs regarding management of acute watery diarrhea in the children under five years of age. The dearth in the knowledge of GPs pertaining to the latest protocols elaborated by WHO and UNICEF has unearthed a dire need for their continuous medical education under the stewardship of the Government of Pakistan by allocating essential resources to update the information level of GPs catering medical services for almost 80% of community. Although the information that AWD should be managed with ORS and without use of drugs, seemingly has reached the majority of GPs their practices is not according to this knowledge. The reason behind this could be lack of awareness in the fact that ORS plus zinc alone can manage AWD which is further strengthened by the demand of drugs by parents, competition in practice, influence of pharmaceutical representatives coupled with absence of supervisory control on prescription. DTU course, training workshops have not been able to

produce any significant effect on GP's knowledge and practices for the management of AWD. There should be more appraisal studies at national level to determine the true estimate of knowledge and practices of GPs for the management of diarrheal diseases in the children under five years of age. Government of Pakistan should consider conducting Diarrhea Management Training Courses, workshops as an ongoing program, under the supervision of experts, to update the knowledge

and skills of private practitioners. Continuous Medical Education (CME) and Community Oriented Medical Education (COME) need to be inculcated in national health policy for the General Practitioners working in the private set up for capacity building.

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