

Knowledge and Inventory Management of Misoprostol for Reproductive Health Services Amongst Community Pharmacists in Anambra and Delta States of Nigeria

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ABSTRACT

Background: *Misoprostol, a prostaglandin analogue used in the management of a wide range of reproductive health disorders is safe, inexpensive and easily administered.*

Objective: *To investigate the knowledge of misoprostol amongst Community Pharmacists from Anambra and Delta States, Nigeria, with respect to its indications, contraindications, and side effects; and also evaluate their stocking and dispensing pattern of the drug.*

Method: *Cross-sectional, questionnaire based survey of 22 Community Pharmacists from Anambra and Delta States, Nigeria.*

Result: *There were nine participants from Anambra and 13 from Delta State. The majority were of urban location, 77.8% in Anambra and 76.9% in Delta State. There is significantly higher knowledge of misoprostol, 88.9% and 100% respectively for Anambra and Delta States, compared with current stocking and dispensing of the drug, 22.2% apiece, and 30.8% apiece respectively for the two States. Only two of the 6 listed indications for misoprostol were recognized, each by one participant from Anambra State; while five were recognized, each also, by one participant from Delta State. No respondent from Delta State recognized abortion treatment as an indication for misoprostol.*

Only 40% respondents in Anambra State recognized the contraindications, and 80%, of the side effects of misoprostol, while 80% and 70% respondents in Delta State recognized the contraindications and side effects respectively.

Conclusion: *There is gap in knowledge and inventory management of misoprostol for reproductive health problems' management amongst Community Pharmacists. There is need for sensitization and advocacy program on the use of Misoprostol for these health professionals.*

Key Words: *Knowledge, Inventory Management, Misoprostol, Pharmacists, Nigeria.*

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INTRODUCTION

Reproductive health, simply defined as a complete state of physical, mental and social well-being and not merely the absence of disease or disorder of the reproductive process, constitutes a measure of the social and economic well-being of any nation.^{1,2} Of the various components of reproductive health, unsafe motherhood represented by maternal mortality has constituted the foremost infringement of the reproductive rights of women and its address has over several years posed an intractable challenge to several countries of the developing world.³ In Nigeria for instance, the yearly maternal deaths of 59,000 women which constitute approximately 10% of the overall global maternal mortality statistics have remained a great embarrassment to the federal government and its benefactors alike. Two of the five major direct medical causes of maternal mortality viz obstetrics haemorrhage and abortion, occupy prominent positions for the role they play in the causation of maternal deaths, in spite of their being largely preventable. Obstetrics hemorrhage for instance, is known to account for as high as 25-30% of maternal deaths, while abortion and its complications have been implicated as the cause of maternal deaths to the magnitude of as high as 50% in some countries.^{4,5}

Reducing the burden of maternal mortality in resource poor countries of developing world requires a wide introduction of the application of simple, economical, yet safe and effective management methods, of which misoprostol ranks high. Misoprostol is a synthetic prostaglandin E₁ analogue originally developed and approved globally for the prevention of peptic ulcer. The tablet which has no known adverse interaction with other drugs is inexpensive and usually stable at room temperature and has long shelf life.^{6, 7} The drug is effective in the treatment of early pregnancy failure, induction of second trimester abortion, ripening of the cervix and induction of labour.⁸⁻¹¹ It is also used for the treatment of post partum haemorrhage. Its use for obstetrics and gynecological indications is however off label in most countries.¹² Misoprostol has over the years, been marketed in Nigeria as Cytotec for the treatment of peptic ulcer and has only recently been approved for use by the Nigerian National Agency for Food and Drug Administration and Control (NAFDAC) for the treatment of post partum haemorrhage.

In Nigeria, the provision of maternal healthcare services is not restricted to skilled practitioners alone, that is doctors and nurse-midwives, but also to a wide range of practitioners, orthodox and unorthodox alike. The community pharmacists are an important group of maternal healthcare providers for the part they play, not

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only in the stocking and marketing of reproductive healthcare medications but also in routine consultations and treatment of some reproductive health problems.

This study investigates the knowledge of misoprostol amongst community pharmacists from Anambra and Delta States of Nigeria, with respect to its indications, contraindications, and side effects. It also evaluates their stocking and dispensing pattern of the drug for the management of reproductive health problems. Information obtained from this study will determine whether further action is necessary towards the sensitization of health practitioners to an increased use of this vital drug for reproductive health services.

METHODS

This is a Cross-sectional, questionnaire-based survey of 22 Community Pharmacists attending a lunch meeting at two locations Nnewi in Anambra State and Asaba in Delta State respectively of South-east and South-south Nigeria. The survey was carried out on 18th June 2009 and 2nd September 2009 at Nnewi and Asaba respectively. The questionnaire schedule elicited information from the respondents with respect to their bio-social characteristics sex, duration and location of practice, and number of clients receiving misoprostol within three months preceding the study; respondents' knowledge, usage, and availability of misoprostol/cytotec; and their knowledge of indications, contraindications, and side effects of misoprostol/cytotec. Data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 15.0, and displayed in Tables. Statistical comparison of variables was made where necessary using Chi-square test.

RESULTS

Table I shows the distribution by socio-demographic characteristics of the respondents for the two States studied. There were nine participants in the Anambra

State meeting, consisting of eight males and one female, while Delta State had 13 participants comprising nine males and four females. The majority of the respondents had practiced pharmacy for 21 years and above 7 (77.8%) in Anambra State and 6 (46.2%) in Delta State and most of them were based in urban location, 7 (77.8%) in Anambra, and 10 (76.9%) in Delta State.

The distribution by knowledge, usage, and availability of misoprostol/cytotec as shown in Table II indicates that 8 (88.9%) and 13 (100%) respectively of the participants in Anambra and Delta States know about misoprostol. Only 2 (22.2%) pharmacists in Anambra State and 4 (30.8 %) in Delta State have treated 5-10 patients with misoprostol over the 3 months preceding this study. Knowledge of misoprostol therefore is statistically significantly high compared with use, ever stocked, current stocking, and dispensing of the drug by the community pharmacists for both Anambra and Delta States. $P < 0.05$ for each of the states.

Table III shows the distribution by knowledge of indications, contraindications, as well as the side effects of misoprostol. Of the 6 indications for misoprostol listed in the questionnaire, only 2 (post partum hemorrhage and abortion) were recognized, each by one of the 9 respondents from Anambra State; and 5 were recognized, again each by only 1 of the 13 Community Pharmacists from Delta State. No respondent from Anambra State recognized the treatment of peptic ulcer as an indication for the use of misoprostol. Similarly, no community pharmacist from Delta State recognized the treatment of abortion as an indication for the use of misoprostol. Of the 5 contraindications to the use of misoprostol and 10 side effects of the drug listed in the questionnaire, only 2 (40.0 %) of the contraindications and as high as 8 (80 %) of the side effects were recognized by respondents in Anambra State while 4 (80 %) and 7 (70 %) respectively of the contraindications and side effects were recognized by respondents in Delta State.

Table I: Distribution by social and demographic characteristics

CHARACTERISTICS	STATES	
	ANAMBRA N (%)	DELTA N (%)
Sex		
Male	8(88.9)	9(69.2)
Female	1(11.1)	4(30.8)
Total	9(100.0)	13(100.0)
Duration of practice		
< 10	0(0.0)	2(15.3)
10 - 20	2(22.2)	5(38.5)
21 - 30	7(77.8)	6(46.2)
Total	9(100.0)	13(100.0)
Number of clients receiving Misoprostol (Before the study)		
< 5	8(88.9)	7(53.8)
5 - 10	1(11.1)	2(15.4)
No response	0(0.0)	4(30.8)
Total	9(100.0)	13(100)
Location of practice		
Urban	7(77.8)	10(76.9)
Rural	2(22.2)	0(0.0)
No response	0(0.0)	3(23.1)
Total	9(100)	13(100.0)

Table II: Distribution by knowledge, usage, and availability of Misoprostol/Cytotec

CHARACTERISTICS	STATES	
	ANAMBRA N (%)	DELTA N (%)
Knowledge of Misoprostol		
Yes	8(88.9)	13(100.0)
No	1(11.1)	0(0.0)
Total	9(100.0)	13(100.0)
Usage		
Yes	2(22.2)	8(61.5)
No	7(77.8)	5(38.5)
Total	9(100.0)	13(100.0)
No of patients dispensed Misoprostol in the last 3 months		
None	0(0.0)	1(7.7)
< 5	0(0.0)	1(7.7)
5 - 10	2(22.2)	4(30.8)
No response	7(77.8)	7(53.8)
Total	9(100.0)	13(100.0)
Ever stocked Misoprostol		
Yes	2(22.2)	7(53.8)
No	4(44.4)	1(7.7)
No response	3(33.3)	5(38.5)
Total	9(100.0)	13(100.0)
Does shop currently stock Misoprostol		
Yes	2(22.2)	4(30.8)
No	4(44.4)	3(23.1)
No response	3(33.3)	6(46.1)
Total	9(100.0)	13(100.0)

Table III: Distribution by the respondents' knowledge of indications, contraindications, and side effects of Misoprostol/Cytotec

CHARACTERISTICS	STATES	
	ANAMBRA N (%)	DELTA N (%)
Indications		
Missing period	0(0.0)	1(7.7)
Vaginal bleeding	0(0.0)	1(7.7)
Peptic ulcer	0(0.0)	1(7.7)
Induction of labour	0(0.0)	1(7.7)
Post partum haemorrhage	1(11.1)	1(7.7)
Abortion	1(11.1)	0(0.0)
On prescription	1(11.1)	0(0.0)
No response	7(77.8)	9(69.2)
Side Effects:		
Excessive bleeding	1(11.1)	2(15.4)
Vomiting	1(11.1)	1(7.7)
Nausea	1(11.1)	2(15.4)
Gastrointestinal upset	0(0.0)	1(7.7)
Pains	1(11.1)	0(0.0)
Fever	0(0.0)	1(7.7)
Abdominal pain	1(11.1)	1(7.7)
Rash	1(11.1)	1(7.7)
Head ache	2(22.2)	0(0.0)
Diarrhoea	2(22.2)	0(0.0)
No response	5(55.6)	7(53.8)
Contraindications		
Threatened abortion	0(0.0)	1(7.7)
Pregnancy	2(22.2)	3(3.1)
Peptic ulcer	0(0.0)	1(7.7)
Pregnancy over 12 weeks	0(0.0)	1(7.7)
Renal impairment	1(11.1)	0(0.0)
No response	6(66.7)	8(61.5)

DISCUSSION

This study on knowledge and inventory management of Misoprostol for reproductive health services was undertaken for a total of 22 pharmacists practicing in two States of Nigeria. Most of these Pharmacists practice in urban centres and had done so for more than 20 years, they are therefore expected to have built up a reasonably large clientele. The findings from the questionnaire studies were interesting. In spite of a considerably high knowledge of misoprostol amongst the pharmacists, only a paltry 2 (22.2 %) and 4 (30.8 %) from Anambra and Delta States respectively were currently stocking misoprostol, and in fact had prescribed the drug for as few as only 5-10 patients over the 3 months preceding the study. The poor stocking and prescription of misoprostol by community pharmacists may indicate an unclear knowledge of the drug.

Reports from studies conducted both in Africa and Europe have highlighted the undoubted efficacy of misoprostol in the treatment of incomplete abortion and other reproductive health related problems.¹³⁻¹⁵ The reproductive healthcare practitioners are therefore expected to have considerably clear knowledge and usage of this life saving drug. This unfortunately is not the case amongst the community pharmacists participating in this study evident from the very high number of pharmacists, 7 (53.8%)-11 (84.6%) and 5 (55.6%)-7 (77.8%) respectively from Delta and Anambra States that failed to respond to the knowledge of the indications, contraindications, and side effects of the drug. Of the 6 indications for misoprostol listed in the questionnaire, only 2 (post partum hemorrhage and abortion) were recognized, each by one of the 9 respondents from Anambra State. Similarly, 5 of the 6 indications listed were recognized, again each by only 1 of the 13 community pharmacists from Delta State. It is

worthy of note that no respondent from Anambra State recognized the treatment of peptic ulcer as an indication for the use of misoprostol even though the drug has been approved for that purpose in Nigeria for a long time. In addition, none of the community pharmacists from Delta State recognized the treatment of abortion as an indication for the use of misoprostol. These are important findings and when combined with the similar scenario presented to the responses to the knowledge of side effects and contraindications to the use of misoprostol, attest unequivocally to the lack of clear information on this very important drug amongst this segment of reproductive healthcare professionals. The reason for this may not be far-fetched and can be considered in the light of the fact that it is only recently that misoprostol had been approved for use in reproductive health management treatment of post partum hemorrhage, by Nigerian National Agency for Food and Drug Administration Control (NAFDAC).

Misoprostol when combined with the progesterone antagonist Mifepristone, has been reported to have a high efficacy (92% - 99%) for complete abortion in addition to an excellent safety profile.^{16, 17} It has also been employed as a standalone medical abortifacient for the treatment of various types of abortion and in fact, many other reproductive health problems.^{10, 11} Its convenience to use is related to the variety of its route of administration orally, sublingually, vaginally, and rectally.¹²

CONCLUSION

Observations from this study, in spite of the relatively small sample size of community pharmacists surveyed, undoubtedly depict a yawning gap in information and therefore knowledge and inventory management profile on the use of the vital drug, misoprostol, for the management of reproductive health problems amongst this important group of healthcare providers in Nigeria. The unacceptably deplorable reproductive health indices in Nigeria have continued to be a source of worry to the government, non-governmental organizations and the generality of the Nigerian people alike. This situation calls for all hands on deck, towards a total commitment to the harnessing and mobilization of all efforts towards the reversal of the undesirable trend. There is need to put in place, a sensitization and advocacy program on the use of misoprostol for the management of reproductive health problems, not just for community pharmacists, but also for all other cadres of health professionals involved in women's health management in the country. This advocacy and sensitization program efforts can be enriched through the development of misoprostol treatment and dosage protocol similar to what had been done in South America.¹⁸ In the words of Weeks et al "If we can

develop practical training programs and treatment protocols for use in rural areas, then the use of misoprostol could potentially lead to a major reduction in abortion-related maternal morbidity and mortality".¹³ This statement is no less applicable to abortion management as it is to other similarly important practical obstetric problems such as post partum hemorrhage.

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