

ASSESSMENT OF PRESCRIPTION OF METRONIDAZOLE BY THE DOCTORS OF DISTRICT MIRPURKHAS.

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Abstract

Background: Metronidazole is a Nitroimidazole antibiotic medication used particularly for anaerobic bacteria and protozoa. It is on the WHO's list of essential medicines (a list of most important medication needed in basic health system)

Objectives: To assess the indications with which metronidazole is being prescribed by the doctors of mirpurkhas.

To set necessary recommendations regarding prescription of drug and emergence of drug resistance.

Place and Time: Mirpurkhas, September 2014.

Methodology: A cross sectional study was conducted among the doctors of Mirpurkhas in which pre tested questionnaire was distributed to 80 doctors which are practicing in different hospitals of Mirpurkhas.

Results: Out of 80 study participants, 56 were medical officers, 24 were post graduates. Regarding mechanism of action of metronidazole 53/80 said that it is anti diarrheal, 50/80 said anti bacterial, 46/80 said anti protozoal, 27/80 said anti helminthic, 12/80 said anti fungal, 6/80 said anti viral, 3/80 said mucosal protective agent. Regarding the indication of metronidazole 75/80 said that they prescribe in any kind of diarrhoea, 56/80 said that food poisoning, 29/80 said IBS and amoebiasis, 26/80 said anaerobic bacterial infections, 24/80 said IBD, 15/80 said intra abdominal infections, 12/80 said bacterial septicemia, 7/80 said skin infections, 3/80 said bone and joint infections and CNS infections, 1/80 said trichomoniasis and RTIs, None said gynaecological infections. Regarding the knowledge of side effects 43/80 know about the side effects of the drug (skin allergy bitter taste, nausea, vomiting, vertigo, constipation) 27/80 didn't know about the side effects. Regarding the contraindications of the drug 39/80 know about it (hepatitis, pregnancy, constipation), 41/80 didn't know about it. Regarding the substitute of metronidazole 62/80 said other antibiotics (levofloxacin, moxifloxacin), 18/80 said anti fungal.

Conclusion: This study reflects that there is unnecessary prescription of metronidazole among the doctors of Mirpurkhas. Most commonly being prescribed for diarrhea, food poisoning, amoebiasis and IBS. It is critical that 27 doctors didn't know the side effects and 41 were not aware of the contraindications.

Keywords: prescription of metronidazole, doctors of Mirpurkhas.

Introduction:

Metronidazole is a core antibiotic for the treatment of anaerobic infections. Its mechanism of action is not entirely clear but the nitro group of metronidazole is able to serve as an electron acceptor, forming reduced cytotoxic compounds that bind to proteins and DNA resulting in cell death. Its indications are pseudo membranous colitis (caused by gram positive anaerobic bacillus), Infections caused by *Giardia lamblia*, *Trichomonas vaginalis*, Anaerobic cocci, Anaerobic gram negative bacilli. Adverse effects are nausea, vomiting, epigastric distress, abdominal cramps, unpleasant metallic taste, moniasis (yeast infection of mouth), neurotoxicological problem (vertigo, numbness), parasthesias in peripheral nerves. Contraindications are pregnancy, hepatitis, CNS disorders, and hypersensitivity to imidazoles.

Methodology:

A cross sectional study was conducted among the doctors of Mirpurkhas in which pre tested questionnaire

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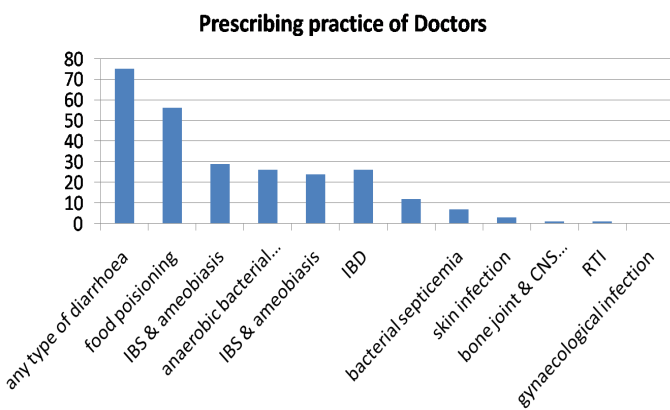
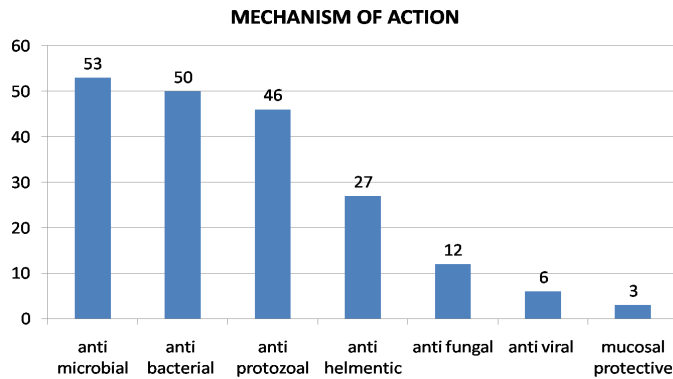
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was distributed to 80 doctors which are practicing in different hospitals of Mirpurkhas.

Results:

Out of 80 study participants, 56 were medical officers, 24 were post graduates. Regarding mechanism of action of metronidazole 53/80 said that it is anti diarrheal, 50/80 said anti bacterial, 46/80 said anti protozoal, 27/80 said anti helminthic, 12/80 said anti fungal, 6/80 said anti viral, 3/80 said mucosal protective agent. Regarding the indication of metronidazole 75/80 said that they prescribe in any kind of diarrhoea, 56/80 said that food poisoning, 29/80 said IBS and amoebiasis, 26/80 said anaerobic bacterial infections, 24/80 said IBD, 15/80 said intra abdominal infections, 12/80 said bacterial septicemia, 7/80 said skin infections, 3/80 said bone and joint infections and CNS infections, 1/80 said trichomoniasis and RTIs, None said gynaecological infections. Regarding the knowledge of side effects 43/80 know about the side effects of the drug (skin allergy, bitter taste, nausea, vomiting, vertigo, constipation) 27/80 didn't know about the side effects. Regarding the contraindications of the drug 39/80 know about it (hepatitis, pregnancy, constipation), 41/80 didn't know about it. Regarding the substitute of metronidazole

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Discussion:

A study was conducted in Sudan about Assessment of antibiotics prescription in hospitalized patients at Elobied hospital in 2008 (*Sudan Journal of Medical Sciences*. ISSN: 1858-5051), in which Metronidazole was among the most commonly prescribed drugs. In 13% drug prescription drug strength was not written, in majority of the records (92.9%) the duration of drug not stated. Thus the empirical prescription of antibiotics is common practice, similar to our study.

Another study about The quality of prescribing in general practice in Kerman, Iran concludes about Inappropriate prescription of the antibiotics. (*Gholamreza-Sepehri, Manzumeh-Shamsi Meimandi, (2005) "The quality of prescribing in general practice in Kerman, Iran", International Journal of Health Care Quality Assurance, Vol. 18 Iss: 5, pp.353 - 360*)

Treating dysentery with Metronidazole in Pakistan editor - Carine Ronsmans and colleagues' study of health professionals knowledge of the treatment of dysentery in bangladesh showed that less than half choose the correct treatment as recommended by WHO in Bangladesh (*BMJ volume 314 11january 1997*). Metronidazole was chosen by 10.9 - 25.6% of the doctors and by 36.8 - 47.3 % of the drug dispensers. Similar and worrying inappropriate prescribing practices of antamoebic drugs have been reported in Pakistan. The Medical Lobby for Appropriate marketing (MalAM) has recently questioned Rhone

- Poulenc Rorer's about his promotion of Metronidazole in Pakistan, which exhorts doctors to "Suspect amebiasis / giardiasis in all cases of diarrhea...immediate treatment is vital. In its response Rhone- Poulenc Rorer endorse that exhortation and stated that "if you agree that amoebiasis and giardiasis should be treated urgently due to their potential impact on morbidity and mortality, then the empirical treatment (with metronidazole) becomes routine in a community unable to afford the charges for stool examination and other associated laboratory or office costs". Although this statement of rhone was not supported by epidemiological evidences which were found in King Edward hospital and Mayo hospital lahore in similar year. Rhone- Poulenc Rorer's current promotion for the routine empirical use of metronidazole is in opposition to the WHO recommendations which state; "Anti parasitic drug should be used only for;

Amoebiasis, after antibiotic treatment of bloody diarrhea for suspected shigella infection has failed or when trophozoite of entamoeba histolytica are seen in faces.

Giardiasis, when diarrhea has lasted at least 14 days and cyst or trophozoite of giardia intestinalis are seen in faces or in the contents of small intestine. Education program are needed to change prescribing practices of metronidazole by the doctors.

Conclusion:

On the basis of findings of this study, the empirical prescription of metronidazole is a common practice at Mirpurkhas. Most commonly metronidazole is being prescribed for diarrhea, food poisoning, amoebiasis and IBS. It is very critical situation that 27 doctors did not know the side effects of metronidazole and 41 were not aware of its contraindications.

Recommendations.

- Rational drug use should be promoted and recommended for general use.
- Drug use evaluation should be done for some of the antibiotics to check whether they were appropriately prescribed or not.

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