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RESEARCH ARTICLE

IRRATIONAL USE OF ANTIBIOTICS AMONG DOCTORS IN PORT SUDAN HOSPITALS

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Key words:-
Irrational use, Antibiotic, Resistant, Doctors, Port Sudan.

Abstract

Introduction: Resistant of antibiotics represent serious medical proble m that face all world and going to make many difficulties in treating infectious disease and result in an obvious reflect on morbidity and mortality in addition to an economic burden. In developing countries like Sudan where poverty play a main role inirrational use of antibiotics this problem became more obvious, here over counter drugs include all antibiotics even the parenteral one; this practice going despite governm ental rules, this beside several other factors that may be divided on doctor's factors, hospital and governmental factors and community factors play a real role in emergence of antibiotics resistant. This study concerning in doctor's role in irrational use of antibiotics.

Objectives: This study done to assess the use of antibiotics by doctors in Port Sudan teaching hospital during the study period, assess the rational use of antibiotics, detect the causes of irrational use of antibiotics and Participate in solving the irrational use of antibiotics.

Methodology: This is a cross sectional analytical descriptive study, done in Port Sudan teaching hospital, Digna reference hospital and almwani hospital in Port Sudan city; eastern Sudan from September 2023 to December 2023.

Result: 60 Doctors were included in this study, all of them knew deferent international antibiotics guidelines while just 22 (36.7%) of them knew Sudan antibiotics guideline. Despite all of study participants knew guideline just 18 doctors (30%) follow these guidelines, 12 doctors (20%) mentioned that they have their own policy while 30 doctors (50%) didn't follow the guidelines because of financial reasons. 16 doctors (26.7%) guided their antibiotic choice by culture, 12 (20%) of them request culture after management failure while just 4 (6.7%) send for culture at presentation. 40 (66.7%) doctors use empirical treatment. 10 doctors (16.7%) use to cover the suspected organism, 32 doctors (53.3%) use combination of bactericidal and bacteriostatic while 22 doctors (36.7%) use combination of two bactericidal drugs. 28 doctors continue antibiotics for proper course while 32 (53.3%) not follow proper course.

Conclusion: Despite practicing medicine in Sudan a lot of doctors doesn't follow Sudanese antibiotics guidelines and many of them follow their own unpublished policies taking in consideration patient's financial state rather than antibiotics efficacy which represent a major serious role in emergence of antibiotics resistance.

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Introduction:-

Resistant of antibiotics represent serious medical problem that face all communitiesand going to make many difficulties in treating infectious disease (1). A lot of researches in different countries raised alarming signs for this problem, in Sudan Einas A Osman et al studded antibiotic resistant and assess the knowledge and practices of healthcare workers in Khartoum and they conclude that despite adequate knowledge of antibacterial resistant, there are significant contextual technical challenges facing healthcare workers in Sudan (2), again Mohamed A Hussain, etal published their research article about prevalence and predictors of antibiotics self-medication in Sudan and they conclude that two out of three individuals in Sudan practice self- medication antibiotics (3), Babra et al in Kenya in their study concluded that irrational antibiotics prescription is high in the KNH CCUs, attributable largely to incorrect choice and wrong duration of antibiotic use (4). No doubt that the development of antibiotics resistant has an obvious reflect on morbidity and mortalityin addition to an economic burden,for example in the European Union it was estimated that antibiotics resistant is responsible for an estimated 33,000 deaths per year and costs the EU EUR 1.5 billion per year in healthcare costs and productivity losses (5), therefore, WHOdeclare a global action plan on antimicrobial resistance in 2015 (6)and at same time a great national effort should be done to solve this problem. The most effective solution for antibiotics resistant is the rational use of antibiotics, the World Health Organization (WHO) and the World Bank gave a broad definition of the rational use of medicines which is appropriate choice of an antibiotics administered at correct dose, frequency and duration using most suitable routeof administration (7).

In developing countries like Sudan where poverty play a main role in use of antibiotics this problem became more obvious, here over counter drugs include all antibiotics even the parenteral one; this practice going despite governmental rules, this beside several other factors that may be divided on doctor's factors, hospital and governmental factors and community factors play a real role in emergence of antibiotics resistant. Some doctors prescribed antibiotics without microbiological base and on their own policy which is not published or agreed by authors or they described antibiotics according to patient's economic state, a gain pharmacist may have prescribed antibiotics for commercial goals. Patients their self-use self-medicine description or doesn't complete the course economic reasons but the main cause for irrational use of antibiotics remain the government as it didn't offer the medications in free base nor under insurance beside no updated antibiotics guideline, and limited microbiological diagnostic services.To resolve the problem of antibiotics resistantall governmental, doctors and community effort should be integrated. Areal researches should conducted to reach to affordable and applicable antibiotics policies that take into account both country and people economic state, beside ethical commitment from both physicians and pharmacistsat same time continuous community education program regarding rational use of antibiotics should be runs while the government should offer the facilities that enable the medical staff to apply the policies and guidelines in form of affordable effective drugs and in time accessible microbiological services, beside routine checkup for these system and periodically assessment for its efficacy**.**

Objective:-

General objectives:

This study done to assess the use of antibiotics by doctors in Port Sudan during the study period.

Specific objectives:

The study aims to:

1-Assess the rational use of antibiotics.
2- Detect the causes of irrational use of antibiotics.
3- Participate in solving the irrational use of antibiotics.

Methodology:-

Study design:

This is a cross sectional analytical descriptive study.

Study area:

The study done in Port Sudan teaching hospital,Digna reference hospital in Port Sudan city; eastern Sudan.

Study duration:

This study done in period from September 2023 to December 2023.

Study population:
The study conducted in 60 doctors who were residents GP, specialists and consultants in surgical and medical units and emergency department.

Data collection and analysis:
Data was collected through questionnaire and analyzed using SPSS version 23.

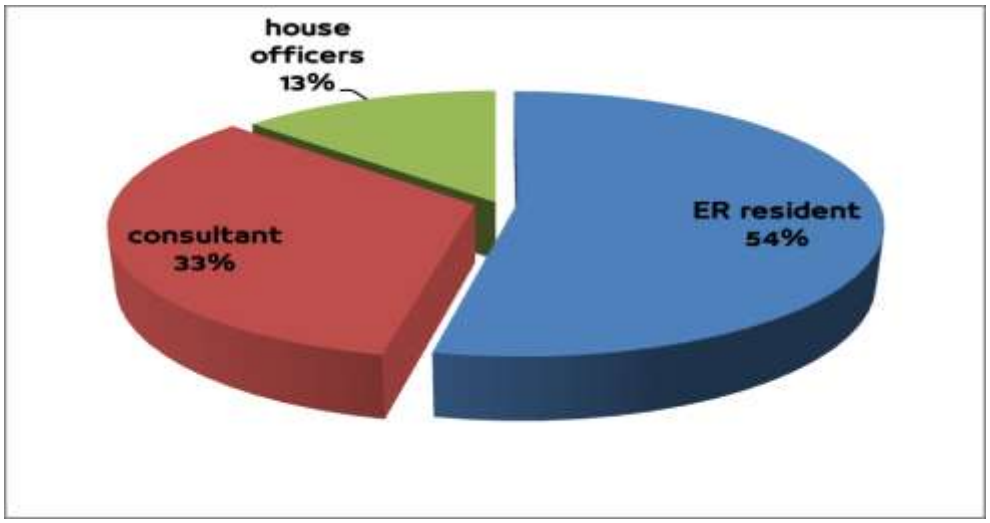
Ethical Considerations.
• Ethical approval has been obtained from the Ministry of Health's Research Ethics Committee.
• Participation is voluntary.
• An informed consent form was provided at the beginning of the survey, briefly explaining the nature and purpose of the study, as well as the expected timeframe for completion.

Result:-

60 Doctors were included in this study, 32 (53.33%) are ER resident doctors, 20 of them (33.33%) are consultant and 8 (13.33%) are house officers. All of them knew deferent international antibiotics guidelines while just 22 (36.7%) of them knew Sudan antibiotics guideline. Despite all of study participants knew guideline just 18 doctors (30%) follow these guidelines, 12 doctors (20%) mentioned that they have their own policy while 27 doctors (45%) didn't follow the guidelines because of financial reasons and 3 doctors (5%) didn't follow guidliner with no specific reason. 16 doctors (26.7%) guided their antibiotic choice by culture, 12 (20%) of them request culture after management failure while just 4 (6.7%) send for culture at presentation. 40 (66.7%) doctors use empirical treatment. 10 doctors (16.7%) use to cover the suspected organism, 32 doctors (53.3%) use combination of bactericidal and bacteriostatic while 22 doctors (36.7%) use combination of two bactericidal drugs. 28 doctors continue antibiotics for proper course while 32 (53.3%) not follow proper course. All participants will follow guideline if its facilities affordable.

Tables(1): Sample size

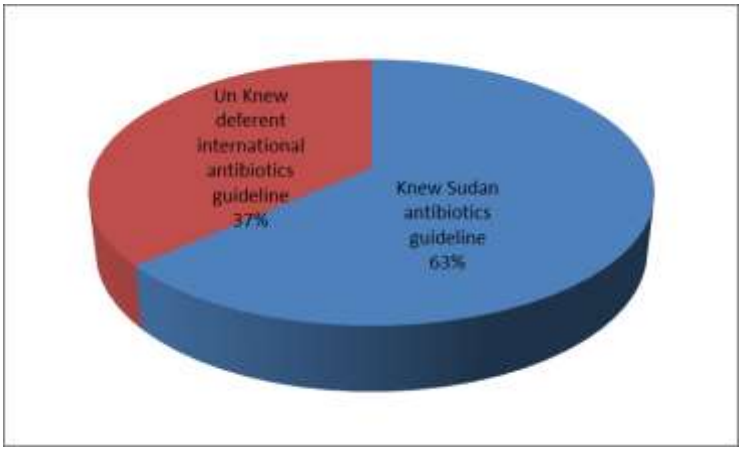
ER resident	32	53.33%
Consultant	20	33.33%
house officers	8	13.33%
Total	60	100%



Figures,(1) Sample size

Tables(2)Knowledge of antibiotic usage guidelines

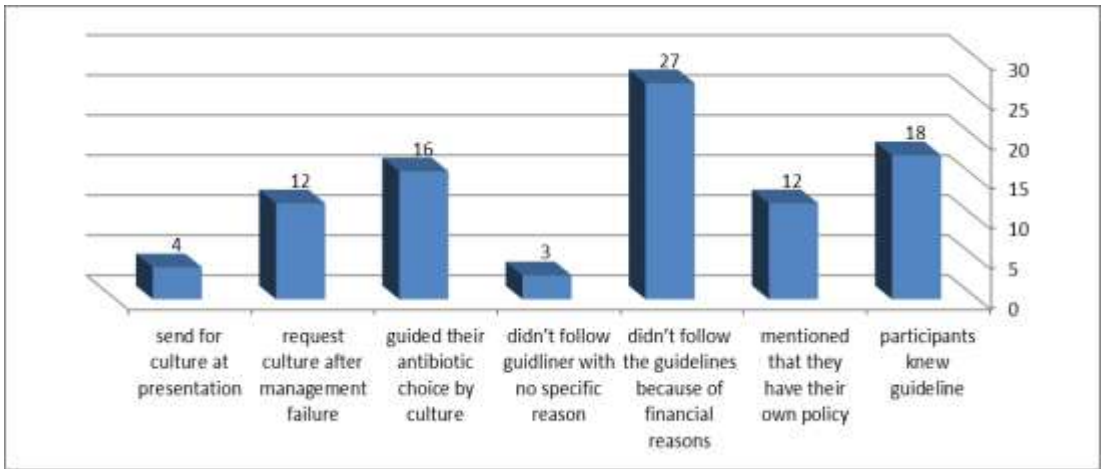
Knew Sudan antibiotics guideline	38	63.3%
Does not knowdeferent international antibiotics guideline	22	36.7%
Total	60	100%



Figures,(2) Knowledge of antibiotic usage guidelines

Tables(3)Participant's adherence to antibiotic use guidelines

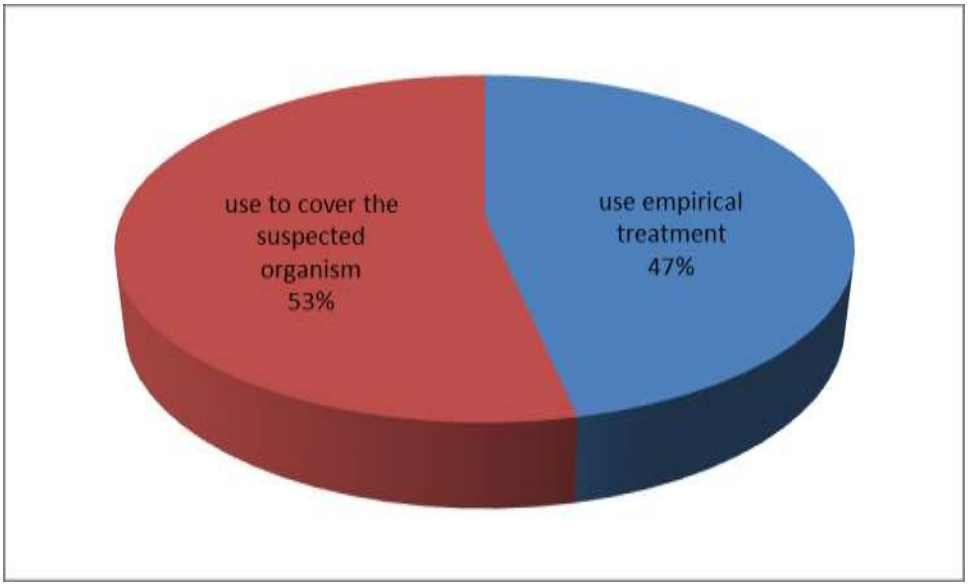
participants knew guideline	18	30%
mentioned that they have their own policy	12	20%
didn't follow the guidelines because of financial reasons	27	45
didn't follow guidliner with no specific reason	3	5%
guided their antibiotic choice by culture	16	26.7%
request culture after management failure	12	20%
send for culture at presentation	4	6.7%
Total	60	100%



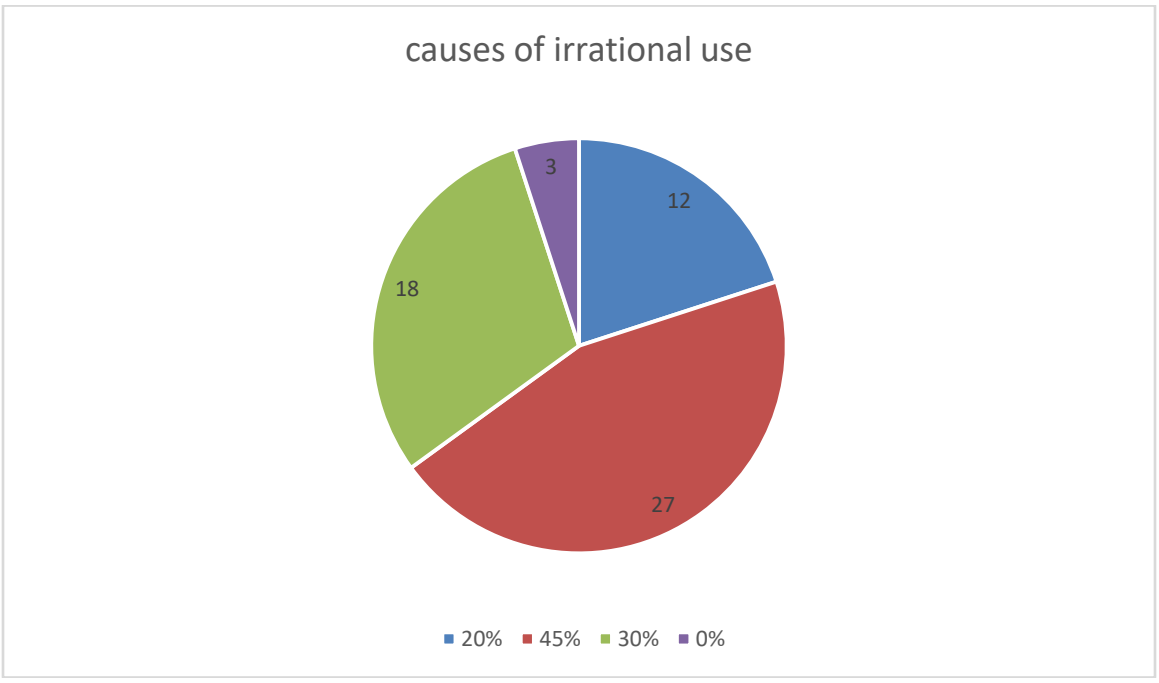
Figures (3)Participant's adherence to antibiotic use guidelines

Tables(4)Participant'scommitment to administering antibiotics correctly

use empirical treatment	28	46.7%
use to cover the suspected organism	32	53.3%
Total	60	100%



Figures (4)Participant'scommitment to administering antibiotics correctly



Discussion:-

Antibiotics resistance is a global health problem, which is soon became a major cause of death in 2019 it contributed in 4.95 million global deaths (8);therefore a great effort should be done to avoid or minimize the emergence of antimicrobial resistance. Rational use of antibiotics which is implies correct choice of antibiotic in correct dose and duration through a suitable route taking in consideration drugs interaction and comorbidities represent the first line against antibiotics resistance. Fighting against antibiotics resistance is an integrated process but doctors plays the key rule and therefore this study conducted among doctors. Unfortunately, despite they practicing medicine in Sudan most of study participant didn't knew the Sudanese antibiotics guideline, and a lot of them didn't follow the global guidelines which they know the thing that represent a risk factor for antimicrobial resistance. Financial reasons play a role in doctor's choice of antibiotics which increase the risk of antibiotics resistance and at same time increase the economic burden on both country and individual through emergence of antimicrobial resistant and increasing absence work days. About 20% of participants follow their own policies which again has a role in emergence of antibiotics resistance, therefore hospital policy should be followed. A lot of participant didn't prescribed a proper course of antibiotics and culture play a minor role in doctors choice of antibiotics in this study even after failure of first choice

Conclusion:-

Doctors plays a major role in anappropriate use of antibiotics and therefore the should follow one agreed hospital policy or national guideline. The governmental role in making national antibiotics guideline and offer its facilitiesin affordable and accessible manner is an important factor that minimize antimicrobial resistance. Doctors commitment is an essential step to ensure an appropriate use of antibiotics. Therefore, the researcher recommends the necessity of establishing a unified national policy regarding antibiotic use, training doctors on its implementation, and enforcing accountability measures for non-compliance. Furt ermore, it is recommended to expand awareness and health education regarding the dangers of irrational antibiotic use among healthcare workers and local communities.

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