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Proceedings

Utilization of antimicrobial agents in Federal Neuro-psychiatric Hospital, Uselu, Benin City, Edo State, Nigeria

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Abstract

Purpose: This research was aimed to evaluate antimicrobial utilization pattern at a regional Neuro-psychiatric Hospital in Edo State, Nigeria.
Methods: Data were obtained retrospectively from a review of 210 in-patient records between April to June 2017, using standard data collection format. Information collected included; patient demographics, diagnosis, antimicrobial treatment regimen.
Results: A total of 210 patients with a mean age of 20.87 years (± 1.3) were evaluated. Antimicrobials were most frequently prescribed for patients within ages of 21- 60 years (72.86%). Beta lactams and nitro-imidazoles were the most prescribed class of antimicrobials in this study. This may be due to their broad spectrum of activity, clinical efficacy, high safety profile as well as availability and affordability. In line with the Nigerian treatment guideline, nitro-imidazoles are a component of multidrug regimen (in combination with omeprazole, clarithromycin and amoxicillin) for therapy of *Helicobacter pylori* infections.
Conclusion: This study showed that relevant laboratory investigation was carried out and used as a guide for antibiotic prescription in only 3.33%, indicative of irrational use of antimicrobials. Promoting the rational use of antimicrobials will result in improved quality of life for the patient and the community. There is need to embrace best global practices through mandatory continuing professional development of practitioners. To ensure that they have the necessary knowledge and skills to prescribe rationally, especially in times when combination therapy is of essence.

Keywords: Neuro-psychiatric setting, antimicrobials, β lactams, nitro-imidazoles, clarithromycins

Indexing: Index Copernicus, African Index Medicus

Background

Abuse and misuse of antimicrobial agents significantly constitute a major global health care problem, which has led to the emergence of resistance microbial cells to existing antimicrobials and increased health care cost.

Aim/Objectives

This research was aimed to evaluate antimicrobial utilization pattern at a regional Neuro-psychiatric Hospital in Edo State, Nigeria. This was with a view to determining the level of compliance of the study centre to standard guidelines on rational use of antimicrobials.

Materials and Methods

Data were obtained retrospectively from a review of 210 in-patient records between April to June 2017, using standard data collection format. Information collected included; patient demographics, diagnosis, antimicrobial treatment regimen (name of prescribed antimicrobial, dosage form/regimen, cost and evidence of laboratory investigation. Data obtained were presented in simple frequency and percentage.

Results

A total of 210 patients (61.43% females and 37.20% male) with a mean age of 20.87years were evaluated. Antimicrobial were most frequently prescribed for patient's age range 21-60 years (72.86%). It has been previously reported that females suffer more from mental illnesses than males in terms of self-reported depression and suicidal tendencies [1]. Their long stay in hospital beds might have contributed to high frequency of infections observed in females. Additionally, patients within the age of 21 to 60 live on their own establishing new associations, such as dating and other social behaviours that predispose them to infections and consequently increasing their utilization of antimicrobials [2].

Beta lactams and nitro-imidazoles were the most prescribed class of antimicrobials in this study. This may be due to their broad spectrum of activity, clinical efficacy, high safety profile as well as availability and affordability [3]. In line with the Nigerian treatment guideline, nitro-imidazoles constitute a component of multidrug regimen (in combination with omeprazole, clarithromycin and amoxicillin) for therapy of *Helicobacter pylori* infections [4].

High incidence of lack of laboratory investigation (96.67%) prior to antimicrobial medications observed could be implicated in the increase of empirical therapy [5]. A survey of the pattern of antibiotic use in family medicine Department of a tertiary hospital in Sokoto, North-Western Nigeria had revealed that about one fifth of the patients had laboratory investigation carried out. Similar study also reported prescription of antibiotics without laboratory investigations. Over the counter sales were common; a practice possibly responsible for the observed increased microbial resistance to antimicrobial agents [6].

In terms of route of drug administration, oral route (84.25%) was observed to be the highest while intramuscular route (0.37%) was the least. This may be connected to the fact that oral treatment, has been shown to save cost, shorten the length of hospital stay, with decrease adverse reactions in contrast to intravenous administration. Its convenience is second to none among the various available route of drug administration. The observed combination of bacteriostatic agents with antimicrobials that act on rapidly growing cells as seen in (penicillins + macrolides, cephalosporine + macrolides) was unjustifiable. Existing data has demonstrated antagonism between bacteriostatic agent and antimicrobials that act on rapidly dividing cells [7].

Conclusion

Many guidelines exist for the improvement of antimicrobial use. Excessive and inappropriate antimicrobial prescribing still constitute major problems globally. This study showed that only 3.33%, of relevant laboratory investigations were carried out before antibiotic prescription. Which was indicative of irrational use of antimicrobials. Promoting the rational use of antimicrobials will result in improved cost containment, quality of life for the patient and the community. Policies promoting the rational use of antibiotics should be strictly adhered to. There is need to embrace best global practices through mandatory continuing professional development of practitioners. To ensure that they have the necessary knowledge and skills to prescribe rationally, especially in times when combination therapy is of essence.

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