



ANTIBIOTIC USAGE PROFILE IN MEDICINE WARD IN A TERTIARY CARE CENTRE OF WEST BENGAL

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Abstract:

• Antibiotics are one of the most commonly prescribed drugs in the medicine wards for curative as well for prophylactic purposes. Increasing resistance due to irrational use of antibiotics is a major health hazard and this unnecessary use of antibiotics, including use of inappropriate drugs at inappropriate dose & duration needs to be checked. The objective of the study is to observe the pattern of antibiotic usage in the Medicine wards of Burdwan Medical College & Hospital and to assess the rationality of the antibiotics used in terms of necessity, choice (groupwise use) dose, duration, route, number. It is a cross-sectional observational study which included adult patients who received antibiotic therapy for curative or prophylactic purposes during the study duration of 15 days. Patients getting treatment for Tuberculosis, Leprosy, Malaria & Filariasis, HIV/AIDS were excluded from the study. Data was collected from indoor prescriptions of all patients fulfilling the inclusion & exclusion criteria admitted during the course of study. Results showed that among the antibiotics prescribed in 381 patients, the maximum number was found to be that of Third Generation Cephalosporin. The most common route of administration was parenteral route. For therapeutic purpose, maximum number of antibiotics were prescribed for Respiratory tract infections. For prophylactic purpose, antibiotics were most commonly prescribed for Gastrointestinal causes. Antibiotic use was observed to be rational in 64.52% of the cases out of which majority were used for therapeutic purposes. Irrational antibiotic usage were observed in 35.8% of the cases of which CVA was most common followed by GI causes like chronic liver disease.

Introduction:

- Antibiotics are among the most commonly prescribed drugs in the medicine ward.
- Wide varieties (almost all groups) of antibiotics are used in medicine ward for curative as well as in some cases in prophylactic purposes.
- Unnecessary use of antibiotics, widespread use of broadspectrum antibiotics, incorrect use of narrow spectrum antibiotics, use of inappropriate drugs at inappropriate dose & duration are the leading causes of increasing resistance.
- Surveillance of antimicrobial use in hospitals is crucial for identifying prescribing patterns to recognize areas for improvement and intervention, as recommended by the Centers for Disease Control and Prevention
- Therefore it is important to analyze the antibiotic prescription patterns in indoor patients of the medicine ward. This study was planned with the aforementioned background

Objective:

- To observe the pattern of antibiotic usage in the Medicine ward of Burdwan Medical College & Hospital
- To assess the rationality of the Antibiotics used in terms of
- Necessity
- Choice (groupwise use)
- Dose
- Duration
- Route
- Number

Materials & Methods:

Study design: Cross-sectional observational study

Study setting: Medicine Ward of Burdwan Medical College & Hospital

Study population: Patients admitted in the General Medicine Ward of Burdwan Medical College & Hospital during the study duration

Study duration: 15 days, December 3rd to Dec 18th 2019

Inclusion criteria: Patients who are on antibiotic therapy in the IPD of Medicine ward, Burdwan Medical College & Hospital for curative or prophylactic purposes

Exclusion criteria: Patients getting treatment for Tuberculosis, Leprosy, Malaria & Filaria, HIV/AIDS

Data collection: Data was collected from indoor prescriptions of all patients fulfilling the inclusion & exclusion criteria admitted during the course of study.

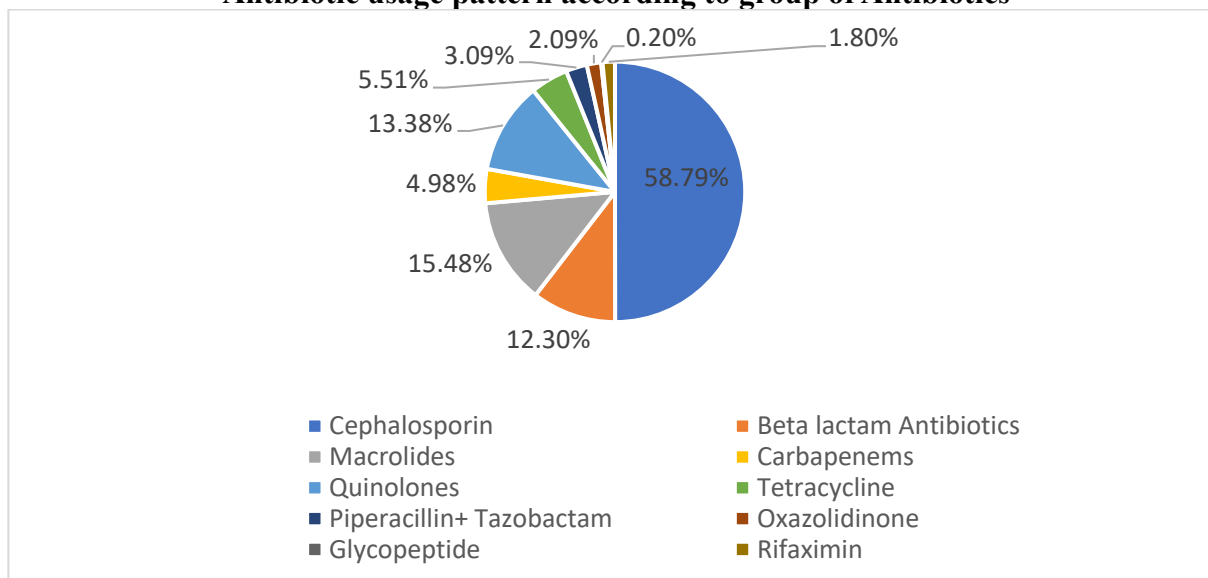
Results:

The antibiotic usage profile and the rationality of their use was noted among the study participants.

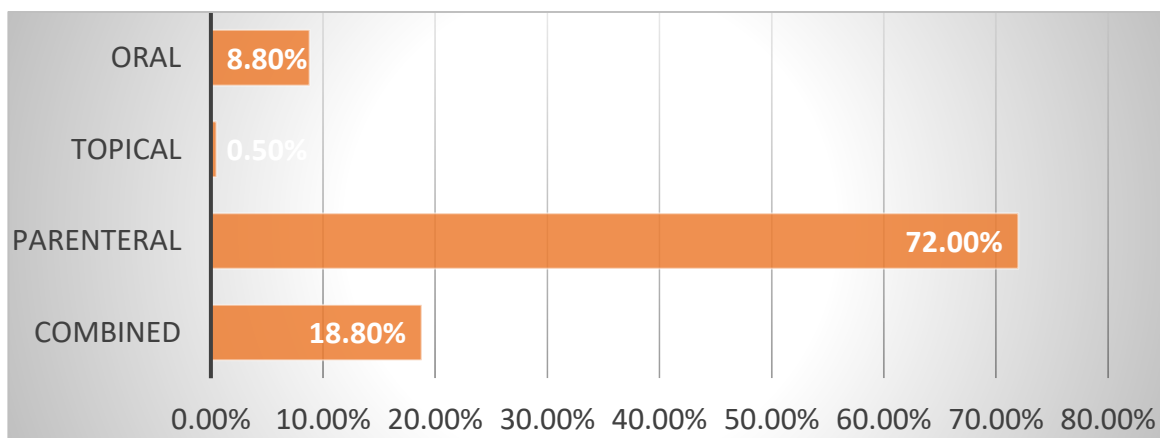
The results were based on:

- Groupwise usage of different Antibiotics
- Number of Antibiotics used: Monotherapy/Dual Therapy/Multiple Therapy
- Routes of Administration
- Rationality of Antibiotic use in terms of dose, duration

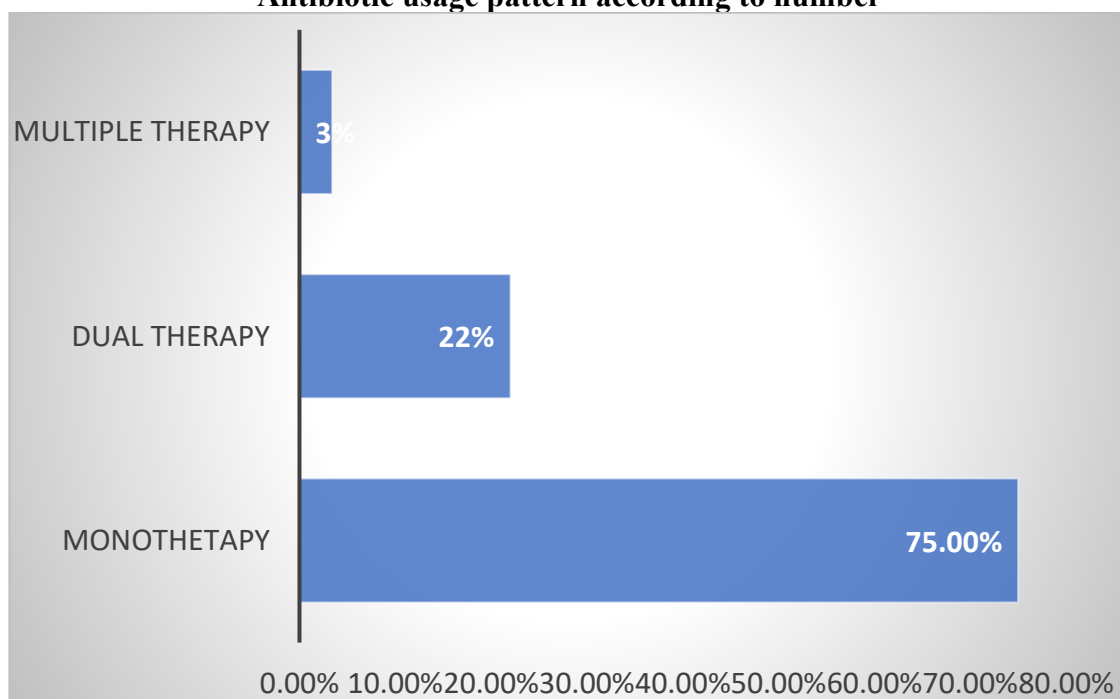
Antibiotic usage pattern according to group of Antibiotics



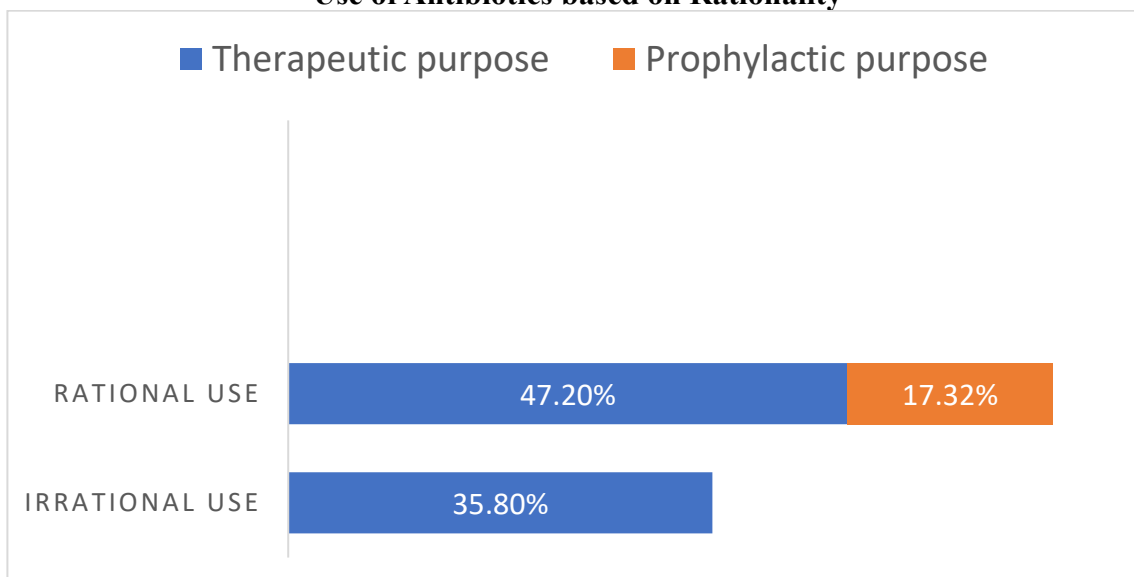
Antibiotic usage pattern according to route of administration



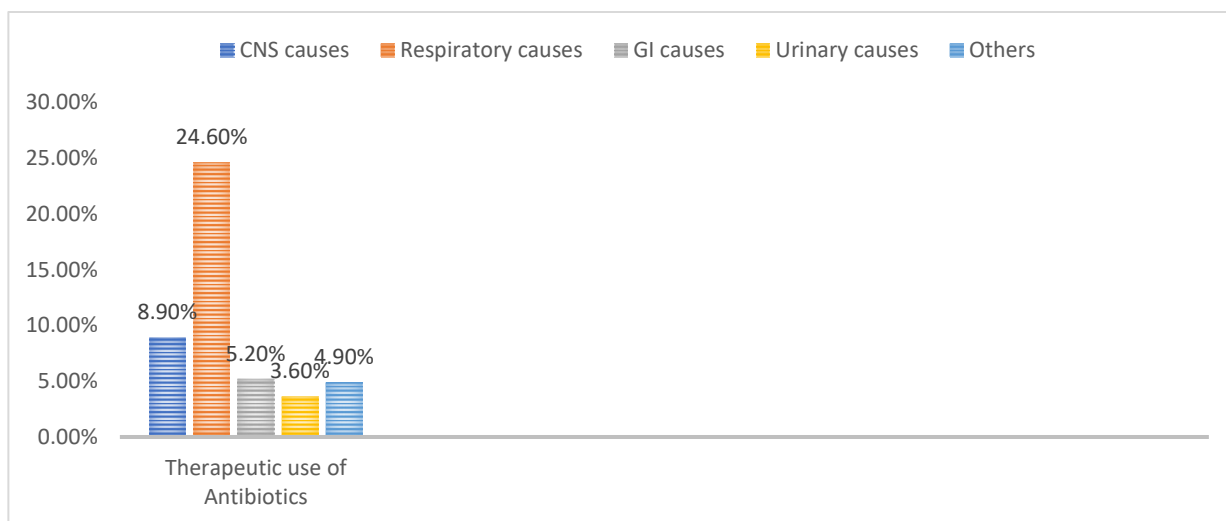
Antibiotic usage pattern according to number



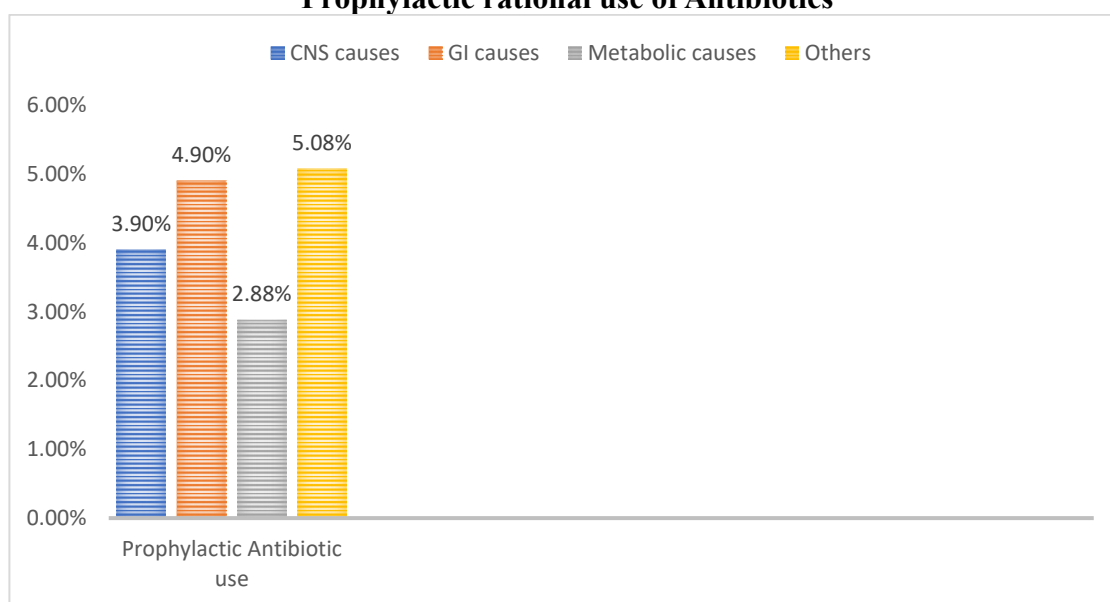
Use of Antibiotics based on Rationality



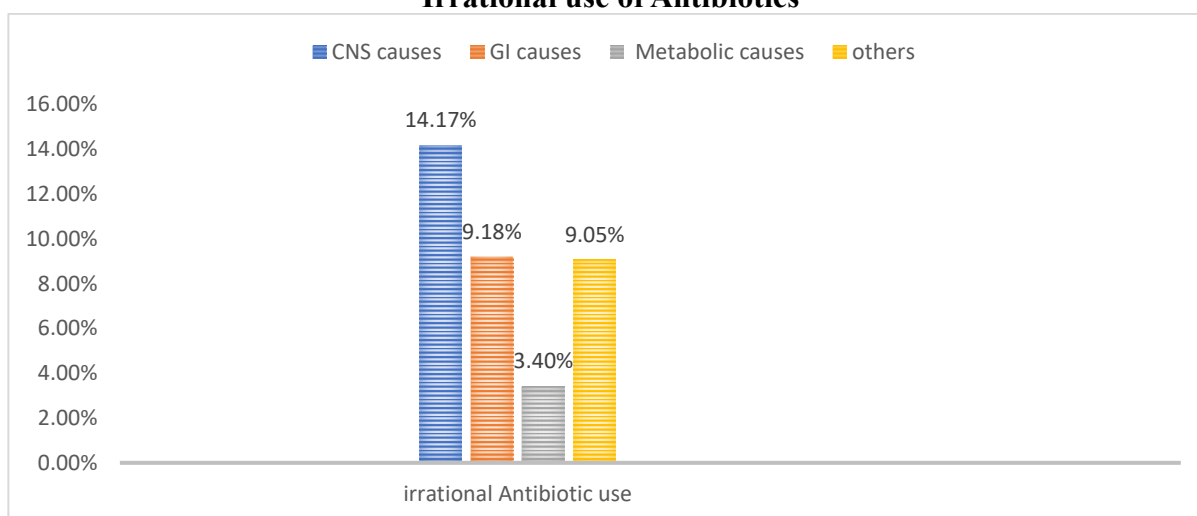
Therapeutic rational use of Antibiotics



Prophylactic rational use of Antibiotics



Irrational use of Antibiotics



Conclusion

- Among the Antibiotics prescribed in 381 patients, the maximum number was found to be that of Third Generation Cephalosporin
- The most common route of administration was parenteral route.

- Antibiotic use was observed to be rational in 64.52% of the cases out of which majority were used for therapeutic purposes
- For therapeutic purpose, maximum number of antibiotics were prescribed for Respiratory tract infections
- For prophylactic purpose, antibiotics were most commonly prescribed for Gastrointestinal causes like acute onset of chronic pancreatitis & metabolic causes like Diabetic Ketoacidosis
- Irrational antibiotic usage were observed in 35.8% of the cases of which CVA was most common followed by GI causes like chronic liver disease.

Suggestions from the study

- Some common but serious lapses in antibiotic prescription patterns is seen in this study. This emphasizes the need to provide training for rational use of antibiotics across healthcare settings
- A Strategic multidisciplinary approach needs to be established to optimize antimicrobial prescribing emphasizing on the use of the right drug at the right dose for the right duration and recognise when not needed. This is called antimicrobial stewardship programme
- The main goal of antimicrobial stewardship programme is to maintain appropriate antimicrobial use by optimizing use, indication, dose, duration following the patient's best outcomes. Antimicrobial stewardship interventions improved individual patient outcomes, reduced the overall load of antibiotic resistance, and decreased the healthcare expenditure, e.g. reduce the time for hospitalization
- Preauthorization, formulary restriction and prescription audit and feedback are also required to cut off antibiotic use
- Streamlining the treatment on the basis of culture sensitivity report, dose optimization and use of combination therapy in case of high organism load or high chances of mutational resistance are some of the measures for minimizing antimicrobial resistance
- Others include de-escalation of treatment, cycling of treatment/ antimicrobial classes, decreasing the duration of antimicrobial treatment by generation of autogenerated stop orders to cease antibiotic use over a certain period
- Using local susceptibility patterns & guidelines to initiate empirical treatment may also decrease the indiscriminate use of antimicrobials
- Documentation of drug chart
- All these along with promotion of the rational use of medicines by strengthening human resources, improving health facility infrastructure and empowering communities along with long-term, nationwide campaign initiated by the government may be a step forward to curb this rampant use of Antibiotics.

References

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