THERAPEUTIC DRUG MONITORING (TDM) OF VORICONAZOLE IN HAEMATOLOGIC MALIGNANCY PATIENTS

Neha Sharad¹, Gagandeep Singh¹, Immaculata Xess¹, Reshu Agarwal¹, Tulika Seth², K.H. Reeta³

¹Department of Microbiology, ²Department of Haematology, ³Department of Pharmacology

All India Institute of Medical Sciences, New Delhi, India

OBJECTIVE

Objective of the study was to monitor trough voriconazole serum levels in patients with haematological malignancy with clinically suspected invasive fungal infections

BACKGROUND

- ❖ Invasive fungal infections (IFIs): Important cause of concern in immuno-compromised people owing to high mortality and morbidity, particularly in neutropenic patients with hematological malignancies
- ❖ Antifungal agents available for treating invasive fungal infections: polyenes, azoles, and echinocandins
- ❖ Triazoles: Susceptibility more variable, depends on specific agent
- ❖ Voriconazole: Large and unpredictable variations in drug plasma concentrations, follows non-linear pharmacokinetics

METHODOLOGY

- ❖ Study: March 2016 to October 2017
- ❖ Patients with haematologic malignancies: With clinically suspected IFIs being treated with only voriconazole
- ❖ All the demographic and clinical details of the patients were noted
- ❖ Sample: Trough serum levels on day 5 after start of voriconazole
- ❖ Analysis: Bioassay
- ❖ In case of dose alterations following sub and supra-therapeutic levels, TDM was repeated on day 5
- ❖ Clinicians were informed and proper interventions were made according to levels and clinical condition of patients

RESULTS

- ❖ Total of 39 patients were evaluated, 15 children and 24 adults
- ❖ AML: Most common underlying malignancy
- ❖ Fungal pneumonia: Most common IFI
- ❖ All cases were either possible or probable case of IFI
- ❖ Major risk factor: Neutropenia due to chemotherapy sessions
- ❖ After first TDM: 15/39 had levels <1 mg/l, 20/39 had levels in between 1 and 6 mg/l, 4/39 had >6 mg/l
- ❖ Overall successful outcome after evaluation by TDM and dose alterations seen in 86%
- ❖ Side effects developed in 5/39 patients (12.8%)

CONCLUSION

- ❖ Only half of our patients had voriconazole serum levels within therapeutic range after first dose
- ❖ Dose alterations were done in rest for achieving recommended serum levels
- ❖ Thus, we recommend TDM for all patients of hematologic malignancy receiving voriconazole for appropriate management

REFERENCES

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Distribution of TDM levels in children: <1mg/l - sub-therapeutic, 1-6mg/l – therapeutic and >6mg/l – supra-therapeutic

Distribution of TDM levels in adults: : <1mg/l - sub-therapeutic, 1-6mg/l – therapeutic and >6mg/l – supra-therapeutic