Poster

[P27-1] P27-1: Anti-infective drugs (6): Anti-MRSA and antifungals

Chair: Yasuhiro Tsuji, Japan

Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall (1F)

(Wed. Sep 27, 2017 12:30 PM - 1:30 PM Annex Hall)

[P27-1-5] Precision linezolid dosing: save lives, save money!

Cindy Lau[1], Deborah Janet Eldrid Marriott[2] (1. St. Vincent's Hospital, 2.St. Vincent's Hospital)

Keywords: linezolid, precision dosing, prolonged treatment, reduced toxicity, cost saving

Background

Linezolid is an oxazolidinone antibiotic. Use of this agent is increasing significantly as antimicrobial resistance becomes more frequent and immunocompromised patients develop opportunistic infections requiring linezolid therapy. Treatment with linezolid is often complicated by haematological, renal and neural toxicity. The Product Information recommends treatment duration does not exceed 28 days. There is also a significant financial cost despite recent generic formulations. St. Vincent’ s Hospital Sydney is the only institution in Australia offering routine TDM for this agent.

Methods

We analysed the results of linezolid TDM for patients receiving oral linezolid January - December 2016, the impact of TDM on treatment dose, and the cost savings from dose reduction.

Results

27 patients were prescribed 32 courses of oral linezolid in a 12-month period. 26 courses (81%) had linezolid TDM, of which 11 (42%) underwent a dose reduction based on the results. Total theoretical savings were $103,169; a saving of 40% on linezolid expenditure at conventional dosing. Only 1/32 courses (a morbidly obese male) required a dose increase. One patient received 9 months therapy, in which the reduced dose resulted in a saving of $61,254 when compared with standard dosing, and experienced no fall in platelet count or haemoglobin despite the prolonged course. Nine patients received linezolid for more than the recommended period of 28 days (range 31-252, mean 79). Seven of these 9 patients were evaluable, and only 1 patient (concurrently receiving chemotherapy for a haematological malignancy) had a platelet count <100 at the end of therapy. Of six patients who did not undergo TDM and had no dose adjustment, 5 had evaluable pathology results and experienced a mean drop in platelets of 94 (range −12 to −169) despite receiving only a mean 7 days therapy.

Conclusions

TDM costs approximately $30 per assay. It is therefore a highly cost-effective intervention to reduce drug costs and patient toxicity, and improve clinical outcomes with effective antibiotic therapy. Our study clearly demonstrated that it is possible to reduce the dose of linezolid whilst maintaining trough concentrations in the therapeutic range, thereby minimising toxicity and resulting in significant savings to the healthcare system.