Outcomes of levofloxacin prophylaxis in obese versus non-obese patients with hematologic malignancies

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ABSTRACT

Background: Levofloxacin given at a standard dose of 500 mg daily is recommended for antibacterial prophylaxis. However, obese patients have been shown to exhibit enhanced clearance of levofloxacin and may be at risk for prophylactic failures.

Methods: A total of 98 patients met the inclusion criteria (34 obese and 64 non-obese). Estimated CrCL was calculated using the Cockcroft-Gault equation. Differences between weight-related variables and FN were assessed using Chi-square or Fisher exact tests, or Mann-Whitney, as appropriate. Multivariate analysis identified variables independently associated with FN.

Results: BMI > 30 kg/m2, n (%) 14 (53.8) 50 (69.4) 0.16

Conclusions: BMI > 30 kg/m2 was no longer associated with FN after multivariate analysis. Multinomial regression identified presence of mucositis as the only significant variable independently associated with FN.

REFERENCES


RESULTS

Table 1. Bivariate Associations with FN

RESULTS Continued

DISCLOSURE

Presented at the IDWeek Meeting | October 5, 2018 | San Francisco, CA

METHODS

Background:

• FN is an oncological emergency associated with increased morbidity and mortality in patients with cancer.
• Levofloxacin 500 mg daily is recommended by IDSA and NCCN guidelines for infection prophylaxis.
• For fluorquinolones, the pharmacokinetic target associated with killing effect is the AUC/MIC.
• Obese patients with unimpair ed renal function exhibit enhanced clearance of levofloxacin.
• Obese patients may be predisposed to treatment failure due to enhanced clearance of levofloxacin.

Methods:

• Fever: single temperature > 38.3°C OR temperature of 38.0°C sustained over one hour without an obvious cause
• Neutropenia: ANC < 500 cells/mcL OR less than 1,000 cells/mcL and expected to decline below 500 cells/mcL within 48 hours
• Intermediate Risk: autologous HSCT, purine analog therapy, neutropenia anticipated to last 7-10 days, lymphoma, multiple myeloma or chronic lymphocytic leukemia

Figures 1. BMI and FN

Figure 2. BSA and FN

Figure 3. IBW and FN

Figure 4. TBW and FN

Multivariate analysis: Mucorsit (OR 7.6, 95% CI 2.4-26.0) and multiple myeloma (OR 8.8, 95% CI 2.4-42.8) were independently associated with FN

Secondary Endpoints:

• 30-day mortality: 0 patients
• Delayed or modified cycle of next chemotherapy: 1 patient (4%)
• FN requiring ICU care: 6 patients (23%)
• Median hospital LOS for patients with FN: 5 days (range 4-9 days)
• Median ICU LOS for patients with FN: 2.5 days (range 1.5-3.5 days)

Conclusion:

• There were no significant associations between weight-related variables and FN in this cohort of intermediate-risk patients with similar renal function.
• Obesity should not be used as a justification for more aggressive levofloxacin dosing schemes when used for FN prophylaxis in this population.
• Further analysis of the effect of obesity in patients with NCCN defined high infection risk may be warranted.