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Evaluation of the emetogenic potential of tigecycline 50mg twice daily versus 100mg once daily dosing regimen

Nehal Gamal Hashem, PharmD, Greg Mateyoke, PharmD, William Judd, PharmD, BCPS, Meghna Vallbh, PharmD, BCPS; Saint Joseph Health System, Lexington, KY

ABSTRACT

Tigecycline is the first-in-class glycylcycline antimicrobial agent used for the treatment of multidrug resistant organisms. Tigecycline is generally well tolerated with nausea and vomiting being the predominant adverse effects, occurring in up to 26% and 18% of patients, respectively. Studies have shown that tigecycline can be administered once daily due to its prolonged halflife.

A retrospective, cohort, observational, multicenter study on all patients administered tigecycline from January 1st 2010 through June 30th, 2011 admitted to Saint Joseph Hospital, Saint Joseph East, and Continuing Care Hospital will be included. Patients were stratified into two groups based on the dosing schedule. Groups will then be evaluated for the incidence of nausea and vomiting.

A total of 277 subjects were included during the study period. Subjects receiving tigecycline 100mg once daily with prophylactic anti-emetics were less likely to experience nausea and vomiting compared to patients receiving tigecycline 50mg twice daily without prophylactic anti-emetics (p=0.0313)

BACKGROUND

•Tigecycline is a derivative of minocycline and has a novel mechanism of action in which it inhibits protein synthesis.¹⁻³

• Tigecycline is generally well-tolerated with nausea and vomiting being the predominant adverse effects, occurring in up to 26% and 18%, respectively¹⁻⁴.

• Several case reports have shown tigecycline to be safe and effective in difficult-to-treat infections at higher doses ranging from 100 to 200 once daily with no reported adverse effects.⁵⁻⁶

OBJECTIVE

Evaluate the incidence of nausea and vomiting between tigecycline 50mg twice daily versus tigecycline 100mg once daily dosing regimen

RESULTS

Table 1. Baseline Characteristics

50mg Twice **100mg Once P-value** Daily Daily (n=220)(n=57)65 61 Average Age (years) 0.086 Average Weight (kg) 82 87 0.954 Sex Male 100 32 0.197 Female 120 25 Race 5 0 African American White/Caucasian 215 56 NA Hispanic 1 0 0 Other

Table 2. Primary Outcome

Tigecycline 100mg Once Daily					
Nausea/Vomiting	Treatment				
Prophylaxis	Yes	No			
Yes	4	9			
No	17	27			
	P-value: 0.0651 OR: 1.746, 95%Cl (0.314-1.04)				

Tigecycline 50mg Twice Daily				
Nausea/Vomiting	Treatment			
Prophylaxis	Yes	No		
Yes	19	32		
No	92	77		
		Overall: p-value: 0.0313		

Table 3. Secondary Outcomes

	50mg Twice Daily	100mg Once Daily	P-value
Clinical Cure Success Failure	38 182	4 53	0.086
Use of alternative antimicrobials	12	8	0.052
Mortality	14	2	0.614
Average duration of therapy (days)	11	12	0.797
Nursing documentation of N/V	44	10	0.860

Figure 1. Types of Infections

50mg Twice Daily



CONCLUSION

Based these findings, prophylactic anti-emetics is recommended with administration of tigecycline 100mg once daily in order to decrease the incidence of less nausea and vomiting compared to tigecycline 50mg twice daily.

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