Azithromycin As Novel Treatment for Gastroparesis?

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**Background:** Current medical therapy of gastroparesis with prokinetic agents has been disappointing due to the limited options currently available. Erythromycin is a potent prokinetic agent that stimulates gastric emptying. Recently, Erythromycin (EES) has been associated with sudden cardiac death due to prolongation of QT intervals and subsequent torsade de pointes related through its interaction with inhibitors of cytochrome P-450 3A. (NEJM. 2004 Sep 9; 351 [11]: 1089-96). Azithromycin (AZI) is a synthetic macrolide similar in structure to Erythromycin, however it does not interact with the cytochrome P-450 isoenzymes.

**Aim:** The aim of this study was to determine if azithromycin stimulates antral activity in patients with gastroparesis.

**Methods:** Small bowel manometric data on 30 patients undergoing clinical evaluation for gastroparesis was reviewed. Antral activity was measured after infusion of EES 250mg IV and AZI (500mg IV or 250mg IV) were given at different intervals during the small bowel manometry. The parameters measured included the total duration of effect, mean amplitude of antral contractions, duration of highest antral contraction, number of cycles per minute, and the motility index. The data was analyzed using the repeated measures ANOVA for comparison of each medication.

**Results:** Comparison of EES and AZI at a dose of 250 mg shows no difference in antral activity measured in terms of mean amplitude (p < 0.327), duration of antral contractions (p < 0.821), or number of cycles per minute (p < 0.258). Comparison of EES with AZI at a dose of 500 mg however shows that the mean amplitude and duration of antral activity were increased with AZI (p < 0.027 and p < 0.17, respectively). The difference in motility index was 3657 ± 1290 mmHg⋅min with AZI versus 1656 ± 488 mmHg⋅min with EES (p < 0.025). No significant difference was seen with respect to the total duration of contractions or the number of cycles per minute.

**Conclusions:** Azithromycin stimulates antral activity similar to Erythromycin and moreover has a longer duration of effect. Azithromycin unlike Erythromycin however, does not have significant drug-drug interactions and may be a potential new medication for treatment of gastroparesis.