**Incidence of Serotonin Syndrome in Combined Use of Linezolid with Serotonergic Drugs Compared with Linezolid Monotherapy**

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**Background:** Linezolidis an oral antibiotic that has activity against gram positive pathogens. Linezolid a weak, reversible monoamine oxidase inhibitor. If linezolid is taken with other medications that also increase serotonin such as selective serotonin reuptake inhibitors (SSRIs), the risk of developing serotonin syndrome may be higher. Literature on serotonin syndrome due to drug-drug interactions with linezolid is limited to case reports and small retrospective studies, which provide conflicting results. The purpose of this study was to characterize the risk of serotonin syndrome for individuals on linezolid monotherapy compared to linezolid plus other serotonergic agents.

**Objective:** The primary objective was the incidence of serotonin syndrome defined as having one of Hunter’s criteria presenting during the course of linezolid therapy. Secondary objectives included the incidence of serotonin syndrome categorized by number of serotonergic agents, therapeutic class, and dose. ​

**Methods:** This retrospective cohort study assessed adult patients admitted to any Novant Health acute care facility between January 1, 2018 to December 31, 2020 who received linezolid monotherapy or linezolid plus concomitant serotonergic drugs for at least 24 hours. Descriptive statistical analysis and a chi-square test were used to analyze the data.

**Preliminary Results:** Of the 225 charts reviewed, 200 met inclusion criteria with 100 patients in each group. Serotonin syndrome was not reported in any of the two groups. Fifty percent of the patients in the serotonergic drugs plus linezolid group were on SSRIs and the other half were on opioids. Escitalopram 10 mg and sertraline 20 mg were the most common SSRI prescribed with linezolid. In terms of opioid drug class hydrocodone-acetaminophen 5-325 mg followed by oxycodone 5 mg were the most common drugs. The mean number of serotonergic drugs was 1.5 drugs per patient with 3.5 average days of concomitant therapy with linezolid. Sixty-four percent of patients were only on one other serotonergic drug. Pneumonia (34%), skin infection (26%), and bacteremia (20%) were the indications for which linezolid was prescribed.

**Conclusion:** In this retrospective study serotonin syndrome was not reported in either of the two groups. Receiving serotonergic agents plus linezolid or linezolid alone did not increase the incidence of serotonin syndrome. These results suggest the risk of serotonin syndrome might be comparable with serotonergic drugs plus linezolid when compared with linezolid monotherapy.