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## **CLOSTRIDIUM DIFFICILE IN GERIATRIC POPULATION.**

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### **Background**

One of the most widespread and potentially serious infections acquired in long-term care facility is caused by Clostridium difficile (C. Diff). C. Diff is a gram positive, anaerobic, spore forming rod, produces enterotoxin (toxin A) and Cytotoxin (toxin B) which are the most well characterized toxins. They are usually everywhere and don't cause problems unless they grow in large number in the intestine tract of people taking antibiotics or other antimicrobial drug. C. Diff are responsible for 15 - 25 % of antibiotic-associated diarrhea, and at least 5,000 deaths/year.

Stool culture is the most sensitive test, but it is often associated with false-positive results; antigen detection tests are rapid and detect C.difficile antigen but they must be combined with toxin testing to verify diagnosis. Toxin testing include enzyme immunoassays and tissue culture cytotoxicity assays, the first one detects toxin A, B or both, the second assay detects toxin B only and requires more technical expertise in addition to high cost but provides better specificity and sensitivity for C.diff associated disease.

### **Methods**

We analyzed data collected from 6054 samples over a period of 6 months from patients tested in our laboratory using Premier Toxins A&B assay. Patient data was separated into 6 age groups: <50, 51-60, 61-70, 71-80, 81-99, and >100. We calculated the prevalence of positive and negative results in all age group, as well as age- specific. Patients with equivocal or negative results were followed up to 60 days and we calculated the percentage of cases that became positive.

### **Results**

The percentage of patients with positive results increased with age from 8.45 % in < 50 years old to 14.25 % in those > 71-80 years old group and plateaued afterward. 11.5 % of the patient age <50 turn positive within 60 days of the initial test, and increase with age to 18 %. Gender differences were not statistically significant.

### **Conclusion**

Based on biochemical indices C. Diff is more common in elderly people and increases with age. The reason for the increase could be due to the fact that older people have a higher infection rate, and they tend to have more health problems than younger people do and are more likely to be hospitalized and treated with antibiotics.