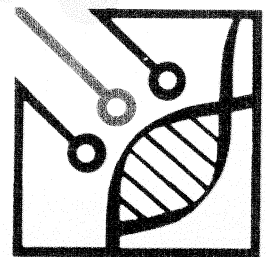


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VIRULENCE FACTORS AND BIOFILM FORMATION AMONG *Acinetobacter* SPECIES ISOLATED FROM DIFFERENT CLINICAL SPECIMENS

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Introduction:

Hospital acquired infections caused by multi-drug resistant *Acinetobacter* species are a major problem causing high mortality. *Acinetobacter* species express various virulence factors which contribute to colonization and pathogenesis.

Objective:

To determine selected virulence factors of clinically isolated *Acinetobacter* species.

Methods:

Fifty five clinical isolates of *Acinetobacter* from various clinical specimens were identified by conventional biochemical tests and API 20NE system. Selected virulence factors: twitching, swarming and ditching motility, gelatinase activity, hemolytic activity, Metallo-Beta Lactamase (MBL) production were determined using phenotypic methods. Biofilm formation was determined using the crystal violet assay.

Results:

Among 55 *Acinetobacter* clinical isolates, 42% (23) were from sputum, 29% (16) ET (Endotracheal tube) secretions, 18% (10) blood and 11% (6) from wound specimens. Surface swarming motility was seen in 2/55 (3.6%) isolates from wound and sputum. Ditching motility was observed in 27/55 (49%) of which majority were isolated from sputum. Only 10/55 had twitching motility and of them 9 were from sputum. 96% (53) formed pellicles in Brain heart infusion broth. MBL activity was positive in 8/55 (14.5%) and of them 7.3% (4/55) were from sputum. Gelatinase activity was observed in 28/55 (50.9%) and highest gelatinase activity was seen in isolates from sputum (69.6%), ET secretions (62.5%) and blood (50%). All isolates formed biofilms and were categorized as strong (30%, 15/55), moderate (46%, 23/55) and weak (24%, 12/55). Majority of blood isolates formed weak biofilms (60%) while moderate biofilms were seen in isolates from sputum (38%), ET secretions (64%) and wound (50%). Strong biofilms were formed in isolates from sputum (38%), ET secretions (28%), Blood (20%) and wound (17%).

Conclusion:

Acinetobacter isolates had multiple virulence factors associated with the source of isolate.