

Antimicrobial Activity of *Terminalia chebula* on *Pseudomonas aeruginosa* Isolated from Nasal Secretions of Chronic Sinus Patient

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ABSTRACT *Pseudomonas aeruginosa* was isolated from the nasal secretions of chronic sinus patient, using a selective medium the cetrimide broth, and confirmed by culturing on *Pseudomonas* fluorescent medium. This organism was highly resistant to antibiotics such as ampicillin, chloramphenicol, vancomycin 30mg each but sensitive to carbenicillin(100mg) which showed a zone diameter of 32 mm. This organism has been biochemically characterized as α -hemolytic, Dnase positive, proteolytic, phospholipase-c positive, catalase, oxidase, nitrate reductase positive, but negative for indole and fermentative reactions of sucrose, mannitol, dextrose and lactose. *Terminalia chebula*, commonly known as myrobalam was found to be effective against this microorganism, as it showed a zone diameter of 50 mm with 2 mg concentration as determined by disc diffusion method. The minimal inhibitory concentration (MIC) of *T. chebula* against 1.0×10^9 cells of *P. aeruginosa* was 500 μ g as determined by the tube dilution technique. The viable cell counts of *P. aeruginosa* in the presence of *T. chebula* at MIC showed reduction of 2 log cycles by 6 h of incubation suggesting that this herbal medicine is bacteriostatic in nature. The various virulence contributors of *P. aeruginosa*, such as high antibiotic resistance, hemolysin, phospholipase-c, Dnase and proteases were inhibited by *T. chebula* at a concentration of 2 mg/ml. These results clearly show that *P. aeruginosa* infects the nasal secretions of sinus patients and is one of the responsible organisms of the pathogenic traits exhibited by these victims. This infection can be controlled by *T. chebula*.

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