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 1.0x10⁹ cells of *P. aeruginosa* was 500 µg 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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