Determination of antimicrobial efficacy of *Triphala Ashchyotana* as a therapeutic agent for acute conjunctivitis

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Abstract

Triphala decoction is a therapeutic agent used in the form of *Ashchyotana* (eye drops) for acute conjunctivitis. The antibacterial assay was performed according to the standard Antibiotic Sensitivity Test (ABST) for *Staphylococcus aureus* (ATCC 25923), *Escherichia coli*, *Pseudomonas aeruginosa*, Methicillin Resistant *Staphylococcus aureus* (MRSA) and *Candida albicans* using chloramphenicol and fluconazole as positive controls. The test drug, *Triphala* decoction, was prepared by boiling dry samples of *Terminalia chebula*, *Terminalia belerica* and *Phyllanthus emblica* 20g each, in 1920ml of water and reducing it to 240ml. Based on the results of ABST, the Minimum Inhibitory Concentration (MIC) and Minimum Lethal Concentration (MLC) against *S. aureus* was determined by using a concentration series ranging from 3 X 50 µl to12 X 50 µl of *Triphala* decoction with 100µl of *S. aureus* in 10ml of nutrient broth. The volumes were equalized up to 11ml using sterilized distilled water. After an overnight, incubation at 37^{O}C, 500µl from each concentration was plated using pour-plate technique and incubated overnight at 37^{O}C. To determine the MLC, a loopful of each concentration was streaked on Nutrient Agar plates and incubated overnight at 37^{O}C. According to the results, *S. aureus* was sensitive to *Triphala* decoction making an inhibition zone diameter (IZD) of 18mm, while the readings for the other species were in the intermediate range of 17mm for *E.coli* and 13mm for *P. aeruginosa*. MRSA strain was resistant to the test drug making IZD 11mm and no inhibition zone was observed for *Candida albicans.* The MIC and MLC for *S. aureus* were of the same concentration (6 X 50µl) showing zero growth after that point. It can be concluded that *Triphala ashchotana* is effective in controlling acute conjunctivitis caused by *S. aureus* and the dosage required is 6 X 50 µl (6 drops). *Triphala* can also be used as a prophylactic agent against acute conjunctivitis.

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