A 210

Inhibitory effect of an Ayurvedic decoction against Shigella sonnei

Shigella species account for a large number of cases for dysentery worldwide. It is one of the few indications for use of antibacterial drugs in diarrhoea in allopathic medicine.

One major problem with antibiotic therapy in dysentery is development of drug resistance. Therefore there is an urgent need to develop new antimicrobial drugs. One way to approach this problem is to screen medicinal plants used in Ayurvedic medicine for the treatment of blood and mucus diarrhoea. In Ayurvedic medicine several decoctions that are claimed to have antibacterial effects are used in the treatment of dysentery. This study was carried out to determine the in *vitro* inhibitory effect on *Shigella sonnei* of a selected decoction (aqueous extracts of nine medicinal plants) used by the Ayurvedic Research Institute of Sri Lanka for the treatment of dysentery.

190 micro liters of normal and double strength decoction (pH 4.3) made by the Ayurvedic Research Institute under sterile conditions was incubated in quadruple with 10 micro liters of 10 fold dilitions of *Shigella sonnei.* A control was carried out in parallel with Ringer's solution (pH 7.4) in place of decoction. Colony counts were performed at the beginning of the experimen tand at 2 hr (test A) 4 hr (test B) and 7 hr (test C) of incubation by calculating colony forming units per milliliter. Sterility control was done using the decoction.

Colony counts (starting with a concentration of 277 x 106/ml of *Shigella sonnei*) of each dilution proportionately dropped to very low levels after 2 hrs of incubation (test A) with the decoction, while the control, incubated without the decoction contined to show an esponential rate of growth. The double concentrated decoction, however, failed to show an increased inhibitory effect. No growth was detected in tests B and C *Shigella sonnei* grew at pH 4.3 and 7.4 in the absence of the decoction.

The specific decoction showed significant inhibitory activity against Shigella sonnei in vitro. These findings could be useful in the search for new antimicrobials for dysentery.