

2 ABSTRACT

We've investigated the in vitro synergistic antibacterial potential of selective serotonin reuptake inhibitors (paroxetine and fluoxetine) and antibiotics (represented by tetracycline and nalidixine).

Activity has been measured against four bacterial CCM strains (*Escherichia coli*, *Pseudomonas aeruginosa*, *Bacillus subtilis* and *Staphylococcus aureus*) and eight tetracycline-resistant strains (*Escherichia coli* and *Pseudomonas aeruginosa*).

Synergy tests were performed using checkerboard method. We've observed growth or growth inhibition of bacteria after 24 hours, 48 hours and 48 hours after reinoculation. We have marked the "border" points area out and converted these points to values of relative concentrations in a graph. According to the under-graph area we've counted the CRIC. This coefficient has shown us the type of antibacterial interaction of the SSRI and antibiotics.

Fluoxetine, paroxetine and nalidixic acid have had bactericidal effect against either CCM strains or tetracycline-resistant strains. Mostly tetracycline has had bacteriostatic effect.

We have rarely observed a time-dependent change in antimicrobial interaction (tetracycline-paroxetine and tetracycline-fluoxetine against *E. coli* CCM and *Pseudomonas aeruginosa* 417, where the CRIC has risen; tetracycline-fluoxetine against *E. coli* 2468, where CRIC has fallen)

We haven't observed any case, where the bacteriostatic effect of SSRIs or antibiotics has changed into bactericidal during presence of another substance.

SSRIs have shown as antimicrobial substances with bactericidal effect. In most cases addition has been the type of their interaction with tetracycline or nalidixic acid. This interaction hasn't been time-dependent.