

Homeopathic medicine activity on the growth of Gram-negative bacteria.

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INTRODUCTION: Homeopathy is a therapy that uses medications prepared with infinitesimal and dynamized dilutions. Current studies demonstrate in vitro activity of homeopathy on gram-positive bacteria such as *Staphylococcus aureus* and *Streptococcus pyogenes*. Among bacterial infections, urinary tract infection (UTI) is frequent, leads to later consequences and the main causal agent is *Escherichia coli* (*E. coli*). In other publications, it has been reported inactivity of homeopathy on *E. coli* cultures. Due to the divergence in the literature, the objective of this study was to evaluate gram-negative bacteria growth under homeopathy treatment. **METHOD:** The medicines *Atropabelladona*, *Cantharis*, *Staphysagria* and *Colibacillinum* were tested at 6CH, 12CH and 30CH in *E. coli* ATCC 25922 and EPEC (Enteropathogenic *Escherichia coli*) ATCC 43887. Two hundred and fifty microliters of the medicines in alcohol 30% were incubated at 37°C with 3 mL of Müller Hinton broth (MH), 10 µL of cultures at 0.5 Macfarland and subsequent dilution at 1/10. Bacterial growth was evaluated in a spectrophotometer at 600nm, in the periods of 6, 12 and 20 hours of incubation. **RESULT AND DISCUSSION:** The results showed no inhibition of bacterial growth under the studied conditions. These data corroborate with studies already published that indicate the absence of action of homeopathy on *E. coli* cultures. Considering other studies, it can be suggested that homeopathic medicines have direct activity on the growth of Gram-positive and not Gram-negative bacteria. Evaluating the two bacterial groups, it is possible to assume that the difference in homeopathy activity could be linked to differences in bacterial wall structure. This hypothesis should be evaluated by other tests with the same bacterial strains. **CONCLUSION:** The homeopathic medicines tested have no direct activity on Gram-negative bacteria cultures.

KEYWORDS: Homeopathy, *Escherichia coli*, Urinary Tract Infection, Gram-positive bacteria, Gram-negative bacteria.