Let Food Be Your Medicine and Medicine Be Your Food

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Providing organic, antimicrobial alternatives to pharmaceutically manufactured antibiotics is crucial in cases in which prescription drugs are not available or patients decline treatment due to concerns of side effects or cost. Perhaps more importantly, this substitution may impede the potentially catastrophic increase in bacterial resistance to pharmaceuticals. In an in vitro assay, the “natural remedies” of grapefruit seed extract, olive leaf extract, oil of oregano, raw honey, and minced garlic were compared to the effectiveness of the antibiotic penicillin after being added to nutrient agar plates inoculated with Streptococcus salivarius and incubated at 37° Celsius for 48 hours. The growth of bacteria in each medium was calculated from the colony area coverage. The data suggested that the antibiotic properties of grapefruit seed extract, olive leaf extract, and oil of oregano were more effective than penicillin as the media exhibited no bacteria growth after 48 hours. The raw unfiltered honey medium allowed a significant amount of bacterial growth after 24 hours and was not as effective as the penicillin. Garlic prevented bacteria colonization after 24 hours, but its antibacterial properties waned and bacteria formation was observed after 48 hours. A zone of inhibition assay at varying sample concentrations is being used to improve the precision of the colony area analysis and to rank the efficacy of each antibiotic. Some natural antibiotics are as effective, or more effective, in preventing bacterial colonization in comparison to prescription penicillin. Further testing must validate the interchangeability of the treatments in humans.

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