Antibiotic Resistance

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Experiment using petri dish science to offer an intelligence for selection of antibiotics creating the least amount of resistance. Antibiotic resistance is when bacteria develops the ability to defeat the drugs designed to kill the bacteria. The emergence of antibiotic resistance in a wide variety of important pathogens of humans presents a worldwide threat to public health. With an antibiotic resistant diagnosis, the chances of recovering from a bacterial infection is much more difficult, if not impossible.Will the repeated use of antibiotics evolve into resistance which will be less effective in eliminating bacteria with antibiotic treatment? Experiment and study antibiotic treatment, utilizing three well known and commonly prescribed antibiotics, three concentrations of each antibiotic, and Escherichia coli, with the intentions of colonizing plates to observe antibiotic resistance over the course of 5 observation days. The experiment, on average, showed that amoxicillin and metronidazole induced antibiotic resistance. Amoxicillin had an average inhibition zone range of negative 6.6 mm. Metronidazole had an average range of negative 7.5 mm. However, sulfamethoxazole was resistant to resistance, shown by the increase in inhibition zones from observation day 1 to day 5; the average range was a positive 2.8mm. The experiment showed that the most effective antibiotic was sulfamethoxazole and the most resistant antibiotic was metronidazole. Further experiments will involve a larger variety of antibiotics and bacteria; a process that allows petri dish science to mimic BID and TID antibiotics. Additional trials will be conducted to create a p-value.

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