What Is the Antibiotic Effect on Gram Positive and Gram Negative Bacteria in a Magnetic Field?

Durastanti, Zackary

E.coli costs the U.S. economy $405 dollars and 100,000 illnesses. As technology advances, there is an increasing exposure to low frequency magnetic fields. So what is the antibiotic effect on Gram positive and Gram negative bacteria in a magnetic field? Using aseptic techniques, an experiment was conducted where 40 plates were poured with LB agar and 20 of them were spread with non-pathogenic E.coli and the other with Staph epidermidis. Then the groups were separated into 4 groups of 10. Using the Kirby-Bauer system of preparing culture, 40 paper discs were soaked in amoxicillin and placed on the S. epidermidis(4 per plate) and 40 paper discs were soaked in Penicillin g procaine and placed on the E.coli (4 per plate). One group of ten from each pathogen was placed in a control incubator and the other was set in an incubator that contained an active electromagnet. After 24 hours of incubation, results were recorded and conclusions were drawn. Based on previous research and data collected from this experiment, the E.coli was positively affected by the electromagnet and caused an increase in antibiotic resistance while the Gram positive bacteria, S. epidermidis, was not affected by the electromagnetic field. This data could be helpful in the healthcare field where people taking antibiotics to treat E.coli that worked around or were exposed to magnetic fields could be harmed because the antibiotic effect on the E.coli was not as great. It is also important to know which strains of bacteria are affected by the magnetic field and which antibiotics are the most effective. This could lead to the rapid reproduction of helpful human tissue (skin,muscle,etc.)

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