Acne Treatments

Leger, Angelle (School: The Advanced Education Science Center Kolmogorov Boarding School of the Moscow State University)

I. Purpose: To determine the most effective acne medication in inhibiting bacterial growth II. Hypothesis: If I treat three bacteria cultures with three different acne medications, then minocycline will prevent bacterial growth more than the other two. III. Procedure: First I measure 5 mg of each medication: benzoyl peroxide, clindamycin, and minocycline and dilute each in 10 mL of sterile water. Second, I swab bacteria from a culture of staphylococcus aureus and streptococcus pyogenes and place it in water to dilute, and measure the concentration of the bacteria with a densometer and try to get it between 50-63 McF. Next, I dilute the bacteria even more in 3mL of half normal saline. I next use the swab to rub each bacterium on three different petri dishes prepared with sheep blood agar. I swab it three different ways to guarantee that it completely covered the surface of the petri dish. Next, I use sterile forceps to dip a small circle of filter paper into the diluted medication and placed the circle of each medication in a petri dish of the two different bacteria. Then, I place the petri dishes into an incubator to allow the bacteria to grow overnight. The next day, I measure the diameter of the inhibition zone around the circle in which the bacteria did not grow. IV. Data: Diameter of inhibition zone in inches Strep, Benzoyl Peroxide: 0.19in.; Strep, Clindamycin: 0.41in.; Strep, Minocycline: 1.31in.; Staph, Benzoyl Peroxide: 0.22in.; Staph, Clindamycin: 0.75in.; Staph, Minocycline: 1.44in. V. Conclusion: Minocycline is the most effective in inhibiting bacterial growth and therefore the best treatment for acne. This means that my hypothesis was correct.