Efficacy of Colostrum in the Inhibition of Common Pathogens: Comparison With Conventional Antibiotics

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Antibiotics have been the main solution to combat bacterial infections, however their inappropriate use has caused health problems, like dysbacteriosis as well as the development of resistance to conventional antibiotics (Theocharis et al., 2020). Upon the first ingestion of colostrum, its antimicrobial properties help to develop the newborn's immune system and a healthy gut microflora. This research evaluated the colostrum's efficacy against E. coli, S. aureus, P. vulgaris and K. pneumoniae using centrifugation and serial dilution to prepare samples: total colostrum (CT), colostrum supernatant (CS), colostrum pellet (CP), and mature milk (LM). These samples were evaluated by antibiograms to observe inhibition halos using CLSI (Clinical and Laboratory Standards Institute) values. Ampicillin, Gentamicin and Chloramphenicol were used as positive controls, while sterile water served as negative control. E. coli and S. aureus showed resistance to all samples, however bacteriostatic inhibition was observed. For P. vulgaris, CT and CS demonstrated a microbicidal effect, while LM and CS lacked significant activity. For K. pneumoniae, a microbicidal effect in CT, CS was observed. This said, LM had the highest inhibitory effect in all concentrations, demonstrating consistency on its efficacy. These findings highlight the antimicrobial potential of breast milk against resistant infections, as clinical treatment. It offers a promising alternative without causing adverse gut health effects and the development of antibiotic resistance.

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