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Exploring Glutinous Rice Flour as an Alternative to Ultrasound Gel: Efficacy, Safety, and Practicality

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Introduction: The research examined the use of glutinous rice flour (GRF) as a substitute to commercially available ultrasound gel because of the scarce supply and expensive costs of regular gels in low-resource health care facilities. A quantitative experimental contrast of GRF and commercial gel was done by researchers and assessed by seven professionals, three sonographers, three sonologists, and one dermatologist.

Methods: Abdominal organs scanned by evaluators consisted of liver, gallbladder, pancreas, spleen, kidneys and urinary bladder on researchers with three various body habitus namely hypersthenic, sthenic and asthenic. The sonographers and sonologists rated the quality of the images in terms of penetrability, echogenicity, and the resolution. **Results:** GRF gel was very effective as the weighted mean scores were 3.78, 3.63 and 3.63 in penetrability, echogenicity and resolution respectively. The skin test of the gel performed by a dermatologist indicated no allergic reactions, redness, and discomfort. GRF gel was of suitable viscosity and simple to spread, which allowed movement of transducers and provided consistent image quality. At refrigerated conditions with phenoxyethanol, the gel was stable and usable within one month. Its physical properties were suitable to ultrasound imaging. GRF gel was cheaper than Aquasonic, retailed at 1,460.00 (\$26.23) per liter.

Conclusions: GRF gel is a cost-effective, safe, and practical alternative to commercial ultrasound gel, especially in resource-limited settings where affordability and access are crucial.

Keywords: penetrability, echogenicity, resolution, viscosity, transducers