

Go nuts! Coconut oil as a patient-preferred alternative to commercial ultrasound gel

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Abstract

PURPOSE: To evaluate the quality of ultrasound images obtained with coconut oil compared with commercial ultrasound gel and to assess patient acceptability to determine whether coconut oil could be used as an alternative ultrasound coupling agent.

METHODS: This was a randomized cross-over study in which forty pregnant patients had standard biometry images obtained with both coconut oil and commercial ultrasound gel during their growth or anatomy ultrasound. All images were then rated by two blinded Maternal-Fetal Medicine physicians on quality, resolution, and detail using a 0-100 scale. Our primary hypothesis is that image quality is equivalent between the two agents with equivalence limits of -10 and 10 on the 0 to 100 scale. Contrasts obtained from linear mixed models were used to estimate the differences in image parameters between the agents. Participant experience was evaluated with an acceptability survey which included five items measured on a five-point Likert scale.

RESULTS: Image quality, as rated by physicians, was found to be equivalent between commercial ultrasound gel and coconut oil. Additionally, there was not a statistically significant difference in image resolution or detail between the two coupling agents. The overall patient experience was significantly higher for coconut oil when compared with commercial ultrasound gel (mean difference = -5.48, 95% CI= [-6.89, -4.06]).

CONCLUSION: Ultrasound images collected with coconut oil as the coupling agent are equivalent in quality to those collected using commercial ultrasound gel. Patients also preferred the use of coconut oil during their ultrasound, making its use a possible way to improve the patient ultrasound experience. Coconut oil has potential as an alternative coupling agent that could significantly increase access to ultrasound use in resource-limited settings.