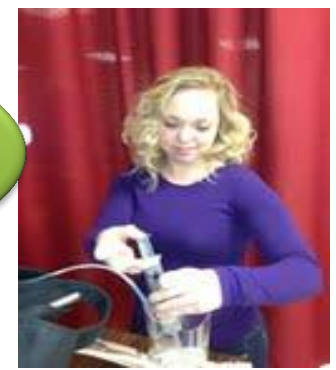


Introduction

Is there a difference in the amount of assessed Gastric Residual Volume (GRV) comparing a large bore 18 Fr polyurethane feeding tube with a small bore 10 Fr polyurethane feeding tube?



Assessment of GRV in critically ill, mechanically ventilated, tube fed patients is important because high GRV is thought to assess for feeding tube intolerance. Nutritional status in critically ill patients is vital to the body's ability to heal. In our study we used simulated stomachs to control the amount of volume in the stomach. This is an advantage over assessment in patients, where the GRV is unknown.

Methods

- Small and large bore diameter polyurethane feeding tubes compared.
- Participants blinded to actual amount of water available in simulated stomach.
- All of the ports were submerged in the water in the simulated stomach.
- Participants injected 30 ml of air into the simulated stomach via the feeding tube.
- Investigators measured and recorded the GRV.
- Data analysis performed using SPSS 20.0

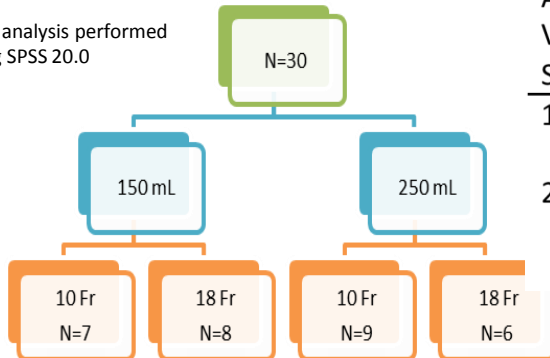
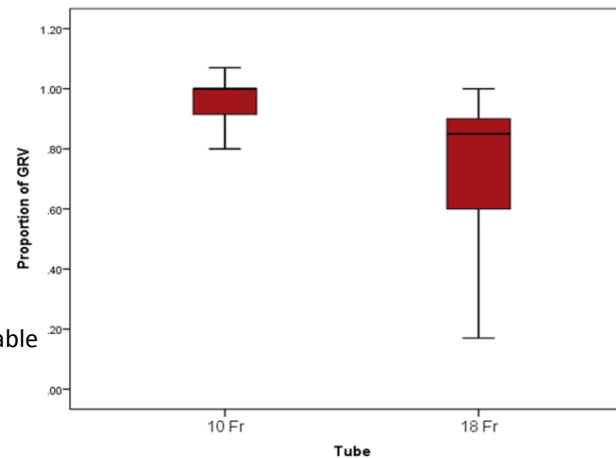


Table 1-1 Percentage of GRV Assessed



Available Volume in Stomach	Tube	GRV (mL) Mean ± SD	Adjusted GRV % of Total Mean ± SD
150 mL	10 Fr	148 ± 8.99	.99 ± .06
	18 Fr	97.5 ± 41.91	.65 ± .27
250 mL	10 Fr	233.1 ± 21.98	.93 ± .08
	18 Fr	208.3 ± 51.73	.83 ± .20

Limitations

Residual water left in the feeding tube and graduated cylinder caused there to be a 10 mL increase in measurement. Two people spilled their aspirated contents. One participant was absent on the day of collection.

Results

Overall, the 10 Fr tube more accurately assessed GRV. With 150 milliliters in the stomach, the 10 Fr tube assessed the GRV with 99% accuracy and the 18 French tube assessed the GRV with 65% accuracy. In trial B, with 250 milliliters in the stomach, the 10 Fr tube assessed the GRV with 93% accuracy and the 18 French tube assessed the GRV with 83% accuracy. Results were statistically significant, $p < .05$.

Conclusion

The 10 Fr polyurethane tube more accurately assessed GRV when compared to the 18 Fr polyurethane tube. However, based on our results, we believe that the assessment of GRV is not an accurate and reliable method for assessing gastric emptying.

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