

# Discoveries of Distinction

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## Type II Diabetes Mellitus: Relationships Between Preoperative Physiologic Stress, Gastric Content Volume and Quality and the Risk of Pulmonary Aspiration

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Pulmonary aspiration is a potentially fatal anesthetic complication occurring when gastric contents enter the respiratory system. Current fasting guidelines aim to decrease the risk of pulmonary aspiration; however, these guidelines are for healthy individuals and fail to account for type II diabetes mellitus (DM II) patients (ASA, 2011). Gastroparesis and hyperglycemia are common conditions associated with DM II and are exacerbated during times of stress, such as an impending surgery (Moldovan et al., 2005). The purpose of this study was to determine if a relationship exists between stress levels and gastric contents in fasting DM II patients presenting for an elective surgical or diagnostic procedure using salivary alpha amylase levels as an indirect measurement of stress and gastric ultrasonography to access gastric contents. No relationship exists between preoperative physiologic stress and gastric contents and there was no difference between mean sAA

levels in the diabetic patients not experiencing preoperative stress compared to DM II patients in the presence of preoperative stress. There was, however, a significant difference between mean gastric volume in healthy individuals and DM II patients. HgbA1C levels 7% or greater were associated with increased gastric fluid and the HgbA1C levels and age were significant predictors of gastric fluid. The majority of the patients in this study were instructed to consume “nothing after midnight” rather than following the current fasting guidelines; likely impacting the results of this study. The implementation of gastric ultrasonography preoperatively would provide the nurse anesthetist with objective data that could influence the anesthetic plan and decrease the risk of pulmonary aspiration in DM II patient. ■

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