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Suppress or not to suppress gastric acid? Intra-gastric pH monitoring Vs. Litmus paper in critically ill patients

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Abstract:

Stress ulceration and gastrointestinal bleeding complicates many clinical illnesses in patients in the intensive care unit (ICU). We hypothesized that suppression of gastric acid and monitoring of gastric pH using intra-gastric pH monitoring can be beneficial to critically ill patients. To test this idea we have performed a pilot study to compare the accuracy of litmus paper to determine gastric pH to a nasogastric platin-antimony pH probe in a teaching hospital in Tehran. Twenty critically ill patients in intensive care unit who required stress ulcer prophylaxis, by using a crossover design the patients randomized to initially received ranitidine by continuous infusion or intravenous bolus and subsequently were crossed over to the other arm of the study. Gastric pH was determined using pH sensitive litmus paper at the initiation of each arm of the study and at 1, 2, 4 and 8 hours after the initiation of ranitidine. In addition, gastric pH was continuously determined over the same time utilizing a platin-antimony pH probe made in Iran.

Pilot Results of gastric pH measurement determined with litmus paper and intra-gastric pH probes demonstrated by regression analysis comparing these two methods showed a good correlation between the two methods ($r=0.7$). The pH probe technique for intra-gastric pH measurement appears to be technically simple and clinically applicable for use on patients at risk for stress ulcer bleeding. It may be more accurate than litmus paper in patient receiving H₂ antagonists. Further investigations are needed to validate this idea.

Keywords:

[Acid Suppression](#) , [Gastric pH](#) , [Litmus paper](#) , [Stress ulcer](#) , [Critical illness](#)

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