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Summary

WIRELESS MONITORING OF GASTROINTESTINAL TRANSIT TIME, INTRA-LUMINAL PH, PRESSURE AND TEMPERATURE IN EXPERIMENTAL PIGS: A PILOT STUDY. METHODS AND INITIAL EXPERIENCE

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UEG Week Copenhagen 2023 | Poster

Colorectal

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A pilot study demonstrates the feasibility of long-term wireless motility capsule monitoring of gastrointestinal function in experimental pigs, establishing a preclinical model for studying drug-induced gastrointestinal side effects.

KEY POINTS

- Five adult female pigs were monitored continuously for five days using wireless motility capsules delivered endoscopically under short-term general anaesthesia, generating 31,150 variables from good or very good quality recordings.
- Mean gastric residence time was 926±295 minutes, gastroduodenal transfer took 5-34 minutes (median 8 minutes), and mean small intestinal transit time was 251±43 minutes, with capsules spontaneously migrating back from duodenum to stomach three times.
- Food intake was associated with increased gastric luminal temperature and decreased intra-gastric pressure, the highest pH was found in the ileum, and the highest temperature with lowest pressure was found in the colon.
- All data displayed substantial inter-individual variability, and the authors conclude this model will enable future studies on gastrointestinal side effects of chemotherapy, acetylcholinesterase inhibitors, and preclinical pharmacokinetic research.

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