

a reliable and safe way of placing nasoenteric tubes and providing nutrition to patients with esophageogastric wounds and gastroparesis, including those with major burns and post-surgery gastric stasis syndrome.

Rebecca Ireland

Original article Wu C-J *et al.* (2005) Clinical application of clip-associated endoscopic method for nasoenteric feeding in patients with gastroparesis and gastroesophageal wounds. *World J Gastroenterol* **11**: 3714–3718

New method for pretransplant islet potency assessment

Failure of some experimental islet transplantations to reverse type 1 diabetes mellitus could be due to the inability of current tests that use DNA-binding dyes to reliably assess the quality of islet preparations. Ichii *et al.* evaluated the utility of laser scanning cytometry (LSC) coupled with fluorescence-activated cell sorter analysis as a new islet screening method.

Analysis with LSC was able to determine the cellular composition of 62 human islet preparations. The proportion of β cells was much lower than expected for samples assessed as being $\geq 90\%$ pure by dithizone staining. Despite this fact, no differences in β -cell content between live islet cell samples and preparations of 78% dead islet cells were revealed using LSC analysis, indicating that LSC cannot detect β -cell viability. An accurate estimate of proportions of dead cells, however, was obtained using TMRE staining and fluorescence-activated cell sorter analysis. This method was used to correctly predict that cells treated with 6 h of hypoxia/starvation would produce an unfavorable outcome when transplanted into diabetic immunodeficient rats. It was also capable of identifying islet cell damage caused by a variety of noxious conditions.

The investigators conclude that this new analytical method may be used on its own, or in conjunction with other potential predictive tests, such as electron microscopy or analysis of ATP contents, to isolate islets that have a suitable β -cell mass and viability for them to be used for transplantation.

Rachael Williams

Original article Ichii H *et al.* (2005) A novel method for the assessment of cellular composition and beta-cell viability in human islet preparations. *Am J Transplant* **5**: 1635–1645

Risk factors for gastrointestinal complications after cardiac surgery

Though gastrointestinal complications in patients who have undergone heart operations are rare, they pose a significant mortality and morbidity risk. Mangi and colleagues therefore investigated the variables that could cause gastrointestinal complications after cardiac surgery, to enable strategies for alleviating this risk to be identified.

Out of 8,709 patients who underwent a heart operation at the Massachusetts General Hospital between 1997 and 2003, 46 subsequently suffered from gastrointestinal complications and were therefore included in this study. The authors identified 89 preoperative, intraoperative and postoperative variables of gastrointestinal complications, which they compared against a control group of 250 randomly selected patients.

The results demonstrated the most frequent gastrointestinal complication after cardiac surgery to be mesenteric ischemia, which was suspected or documented in 31 out of the 46 patients, proving fatal in 68% of these cases. Preoperative predictors of mesenteric ischemia include atheroembolization, heparin-induced thrombocytopenia and hypoperfusion. Other gastrointestinal complications included diverticulitis, pancreatitis, peptic ulcer disease and cholecystitis. Significant predictors of death from a gastrointestinal complication after cardiac surgery included New York Heart Association class II and IV heart failure, smoking, chronic obstructive pulmonary disease and syncope at time of presentation.

The authors conclude that early recognition is important for survival from mesenteric ischemia as this complication often occurs within hours after surgery. They suggest that this could be achieved by fast-track extubation pathways or minimum sedation. Ultimately, techniques to reduce the occurrence of mesenteric ischemia after heart surgery will be necessary to reduce overall mortality.

Marie Lofthouse

Original article Mangi AA *et al.* (2005) Gastrointestinal complications in patients undergoing heart operation. An analysis of 8709 consecutive cardiac surgical patients. *Ann Surg* **241**: 895–904

GLOSSARY

TETRAMETHYLRHODAMINE ETHYL ESTER (TMRE)

A dye that selectively binds to mitochondrial membranes, allowing for detection of apoptosis by a fluorescence-activated cell sorter