

Intestinal transplantation

Outcome, complications and diagnostic approach

Akademisk avhandling

Som för avläggande av medicine doktorexamen vid Sahlgrenska akademien, Göteborgs universitet, kommer att offentligens försvaras i hörsal Arvid Carlsson, Medicinaregatan 3, torsdagen den 17 juni, klockan 09:00

av

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Avhandlingen baseras på följande delarbeten

- I. Varkey J, Simrén M, Bosaeus I, Krantz M, Gäbel M, Herlenius G. Survival of patients evaluated for intestinal and multivisceral transplantation - the Scandinavian experience. *Scand J Gastroenterol.* 2013;48(6):702-711.
- II. Varkey J, Simrén M, Jalanko H, Oltean M, Saalman R, Gudjonsdottir A, Gäbel M, Borg H, Edenholm M, Bentsdal O, Husby S, Staun M, Mäkisalo H, Bosaeus I, Olausson M, Pakarinen M, Herlenius G. Fifteen years' experience of intestinal and multivisceral transplantation in the Nordic countries. *Scand J Gastroenterol.* 2015;50(3):278-290.
- III. Varkey J, Oltean M, Pischel AB, Simrén M, Herlenius G. Initial Experience of Video Capsule Endoscopy After Intestinal Transplantation. *Transplant Direct.* 2016;2(12):e119.
- IV. Varkey J, Stotzer PO, Simrén M, Herlenius G, Oltean M. The endoscopic surveillance of the transplanted small intestine: a single center experience and a proposal for a grading score. *Scand J Gastroenterol.* 2018;53(2):134-139.

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Intestinal transplantation Outcome, complications and diagnostic approach

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Abstract

Background: Intestinal transplantation is a potentially lifesaving procedure conducted in candidates with e.g. intestinal failure. However, a limiting factor has been the complications, which are inherent to the procedure, along with the inadequacies of current modalities to establish a prompt diagnosis of acute cellular rejection. Additionally, most of these procedures are performed in large centres and the outcome in low volume centres is uncertain. The aim of this thesis was to evaluate patients referred for intestinal transplantation in the Nordic countries with emphasis on the procedures and methods to improve surveillance.

Method: Study I & II, patients were assigned to either the waiting list for transplantation or considered unsuitable. Comparisons were made between the groups. The transplanted patients were further highlighted in Study II. In studies III & IV the adequacy of implementing video capsule endoscopy and a new endoscopic scoring system to detect rejection were reviewed.

Results: Survival rate was highest in patients stable on parenteral nutrition in contrast to candidates awaiting transplantation. The 1 & 5 year survival after transplantation was 79 and 65% respectively with rejection in 72% of the patients. Video capsule endoscopy was of clinical benefit in 83% of cases and agreement with histology was moderate ($k=0.54$, $p = 0.05$). The endoscopic scoring system showed a very good inter-rater agreement ($k=0.81$) with an overall sensitivity and specificity of 69 and 83% for rejection and 92 and 86% respectively for severe rejection.

Conclusion: Patient selection was crucial when accepting individuals for intestinal transplantation and the procedure could be lifesaving if chosen adequately. Video capsule endoscopy was useful for detecting complications. The endoscopic score proved efficient on standardizing current practice, but with a risk of missing early signs of rejection and thus insufficient as a singular investigation.

Keywords: Intestinal transplantation, rejection, endoscopy

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