

POSTER PRESENTATION

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Capillary leakage with inflammation and surgery

A Komáromi¹, U Estenberg², J Wernerman^{1,3}, O Rooyackers³, Å Norberg^{1,3*}

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Introduction

The patency of the capillary wall is compromised in inflammation, stress, and fluid overload resulting in extravasation of water and macromolecules [1]. Reliable measurement of capillary leakage is an important tool in the pursuit of treatment effects.

Objectives

To study plasma volume (PV) and transcapillary escape rate of albumin (TER) in relation to acute inflammation and surgical stress.

Methods

Healthy volunteers (group A; n = 10), patients with acute abdominal inflammation and plasma C-reactive protein > 100 mg/L (group B; n = 10), and surgical patients during the reconstructive phase of pancreatic resection (group C; n = 10) were investigated. PV and TER were measured by ¹²⁵I-labeled human serum albumin (¹²⁵I-HSA). Groups were compared by one-way analysis of variance.

Results

Thirty subjects 57 ± 9 years were recruited. TER was 4.5 ± 1.3, 6.1 ± 1.5 and 9.6 ± 5.2 % per hour in groups A-C, respectively, (p = 0.006). Mean PV was 111 ± 19, 114 ± 15, and 102 ± 18 % (p = 0.79) of the corresponding anthropometric values [2]. Plasma albumin was 39.3 ± 2.9, 24.7 ± 4.9 and 19.1 ± 5.3 g/L at the start of TER measurement (p < 0.001).

Conclusions

Capillary leakage assessed by TER was doubled during the later stages of pancreatic resection surgery, compared to the other two groups. While PV was preserved in all 3 groups, plasma albumin was much lower in inflammation and surgery.

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Authors' details

¹Karolinska University Hospital Huddinge, Anaesthesia and Intensive Care, Stockholm, Sweden. ²Karolinska University Hospital Huddinge, Nuclear Medicine, Stockholm, Sweden. ³Karolinska Institutet, CLINTEC, Anaesthesia, Stockholm, Sweden.

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¹Karolinska University Hospital Huddinge, Anaesthesia and Intensive Care, Stockholm, Sweden

Full list of author information is available at the end of the article