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Thomas, Owain Thomas; Eldh, Elisabeth; Flisberg, Per; Cristian, Schaub; Schött, Ulf

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LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00



# Risk of epidural haematoma: pre- to postoperative dynamics of coagulative status in 358 patients undergoing oesophageal resection over ten years

Thomas OD, Eldh E, Flisberg P, Schaub C, Schött U

**Background:** Epidural anaesthesia and analgesia is particularly indicated for oesophageal surgery, which usually involves many hours of thoracoabdominal operation. There is a risk of haemorrhage and patients are often malnourished. A rare but serious complication is spinal haematoma, which has a frequency of between 1:4105<sup>1</sup> and 1:10 300<sup>2</sup>. The risk is greatest at puncture but is also an increased risk upon withdrawal of epidural catheters, presumably due to disruption of clots. Coagulation tests are therefore routinely taken at our hospital before epidural catheters are withdrawn. There is, however, little evidence for guidelines regarding which tests are appropriate, why they might indicate coagulopathy, and what to do when aPTT (activated prothromboplastin time) or PT-INR (prothrombin time-international normalized ratio) are elevated<sup>3,4</sup>.

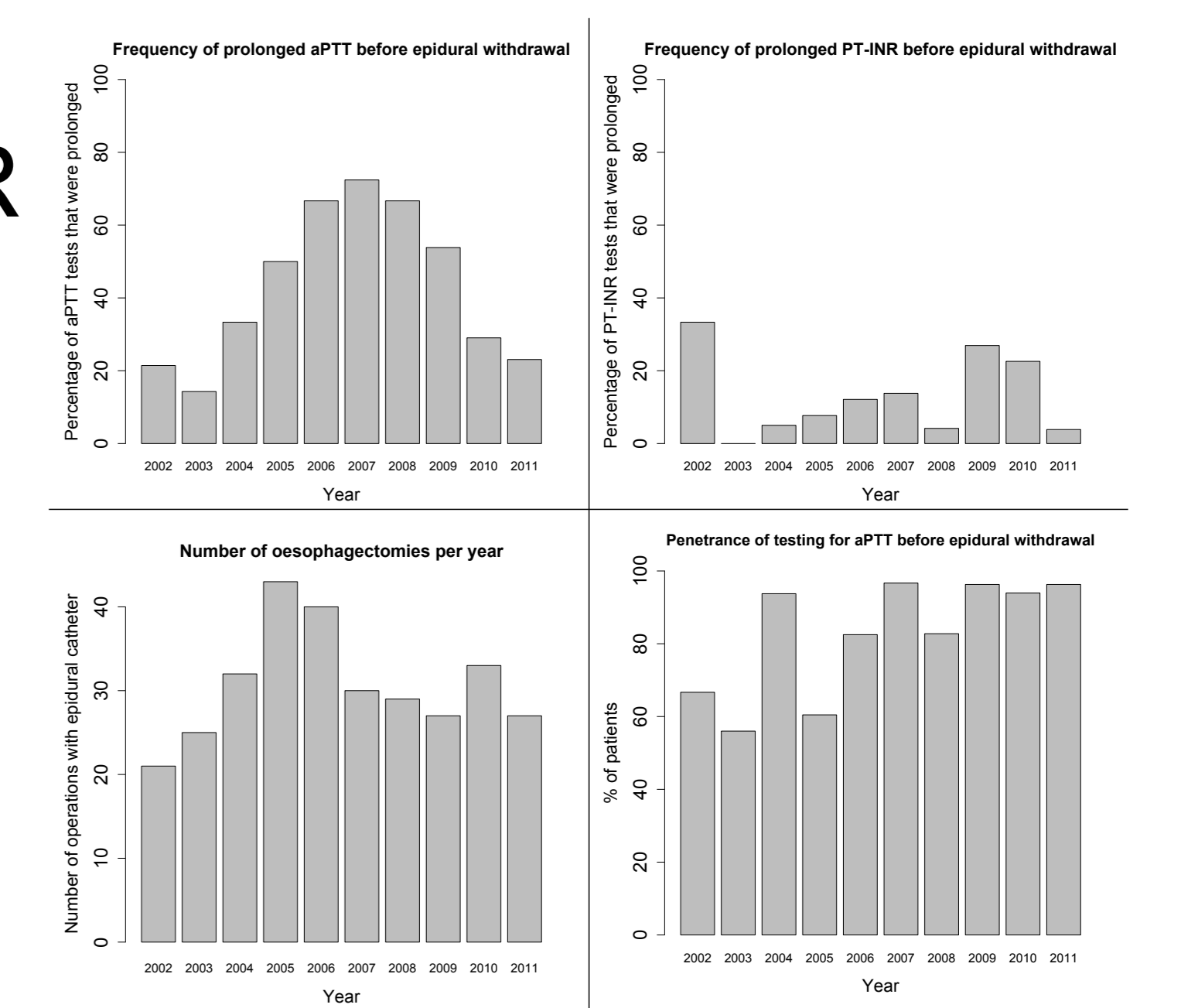
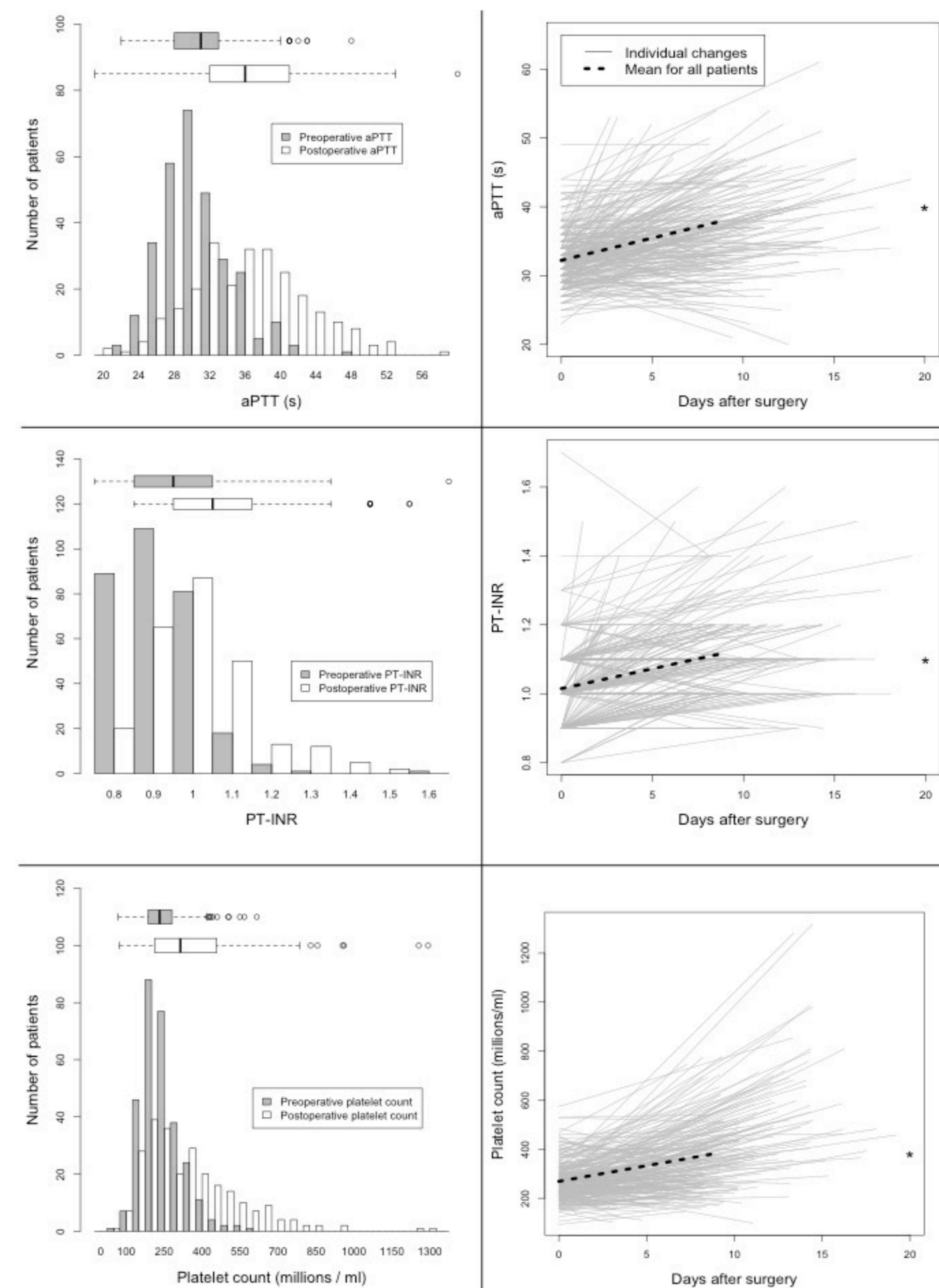
**Method:** Our regional ethical review board granted approval (DnR2012/211). We identified patients who had received an epidural or intravenous analgesia pump for oesophagectomy between 2002 and 2012, using pump prescription notes. Patients' blood test results and details of their operation, amount of haemorrhage, complications etc. were recorded. Data was manipulated in Microsoft Excel while R was used for statistics and diagrams

Owain Thomas, MD MA (Cantab) DESA.  
Department of Intensive and Perioperative Care, Skåne University Hospital, 221 85 Lund, Sweden.  
Institution of Clinical Sciences, Medical Faculty, Lund University, 22185 Lund, Sweden.

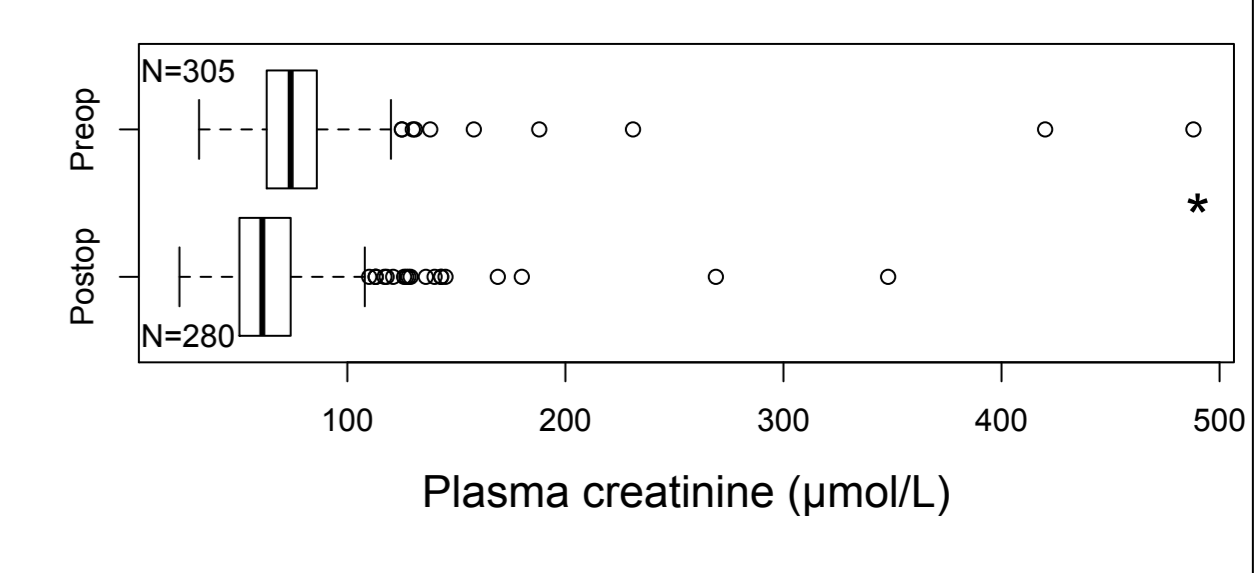
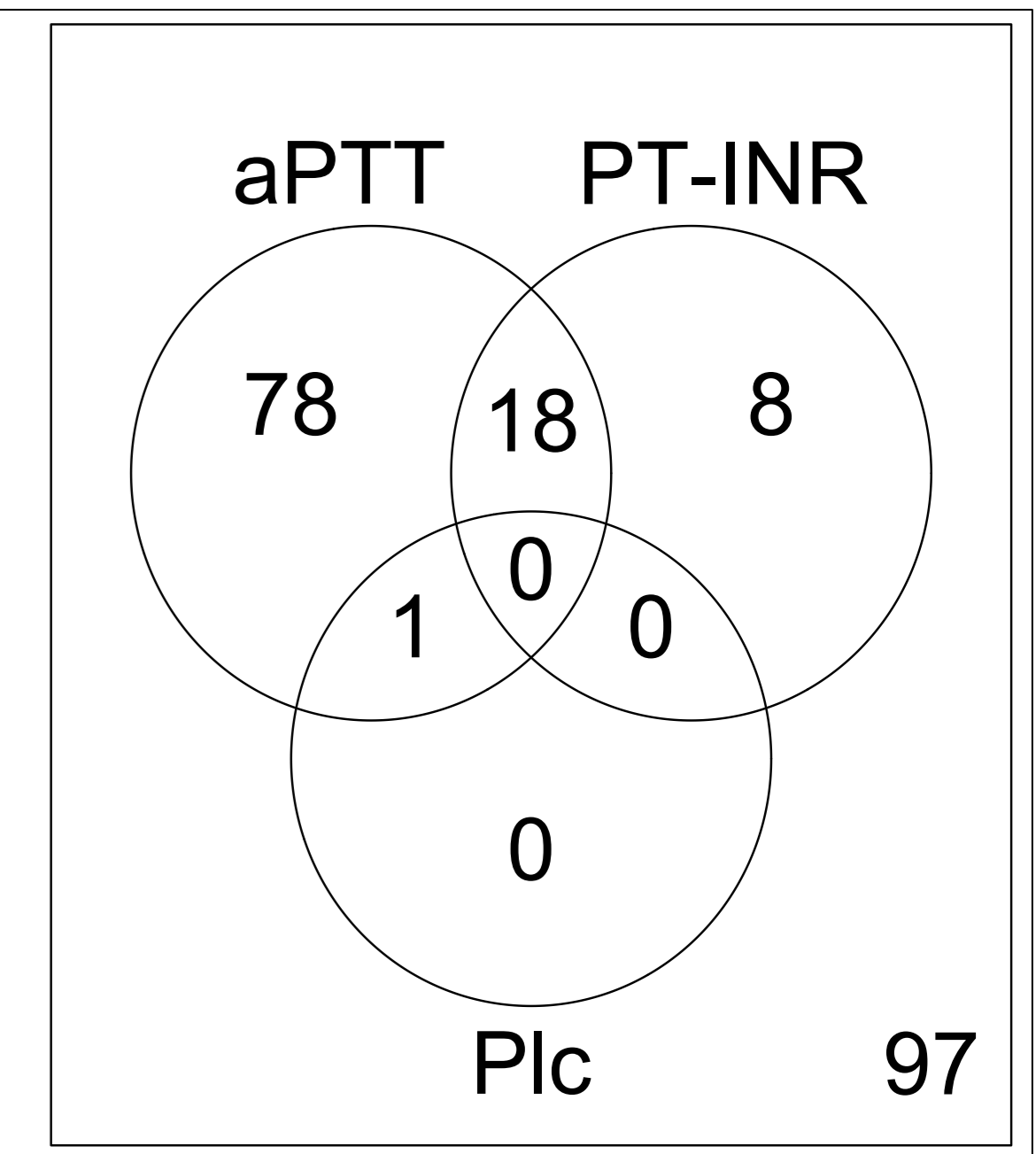
**Results and discussion:** 358 patients were included, of which 307 received a thoracic epidural catheter and 51 a patient-controlled intravenous morphine infusion. Nine of these 51 did not receive an epidural because of abnormal preoperative routine coagulation test results, one had von Willebrand's Disease, one scleroderma, and one renal failure. Ten had relative anatomical contraindications and six were difficult to catheterize or the epidural failed to work. No serious complication of epidural catheterization was recorded.

Routine coagulation tests taken before surgery and on the day of planned withdrawal of the patient's epidural catheter demonstrate that all three measures: aPTT, PT-INR and platelet count, increase significantly. (\*:p<0.05). Thrombocytopenia was almost non-existent while aPTT and PT-INR were more often elevated. There was significant variation in the frequency of prolonged PT-INR and aPTT between years.

**Possible reasons may be:**  
-varying laboratory methods  
-varying use of colloids  
-varying clientele  
-improved nutrition



aPTT is the most problematic test when screening for coagulopathy before removal of epidural catheters. Of the 202 patients with complete results for aPTT, PT-INR and platelets, aPTT was elevated in 97 cases. Plasma creatinine was significantly lower postoperatively, suggesting that renal failure and accumulation of LMWH was not responsible.



1. Moen V, Dahlgren N, Irestedt L: Severe neurological complications after central neuraxial blockades in Sweden 1990–1999. *Anesthesiology* 2004, 101:950–959  
2. Miyazaki M, Takasita M, Matsumoto H, Sonoda H, Tsumura H, Torisu T: Spinal epidural hematoma after removal of an epidural catheter: case report and review of the literature. *J Spinal Disord Tech* 2005, 18:547–551.  
3. Breivik H, Bang U, Jalonen J, Vigfusson G, Alahuhta S, Lagerkranser M: Nordic guidelines for neuraxial blocks in disturbed haemostasis from the Scandinavian Society of Anaesthesiology and Intensive Care Medicine. *Acta Anaesthesiol Scand* 2010;54:16–41.  
4. Van Veen JJ, Noakes T, Makris M. The risks of spinal haematoma following neuraxial anaesthesia or lumbar puncture in thrombocytopenic individuals. *British Journal of Haematology* 2010; 148; 15–25