O2-10

### The effect of hemolysis and electrolytes on the tHb measurement by using ABL77

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*Introduction:* There are two types of methods for measurements of total hemoglobin concentration (tHb). One is absorbance spectrum method, and the other is electrical conductivity method. Blood gas analysis apparatus ABL77 (Radiometer, Copenhagen) determines tHb concentration by electrical conductivity. In the current study, we investigated the effects of hemolysis and electrolytes on the accuracy of tHb measurement using ABL77.
*Methods:* Blood samples were obtained from 5 volunteers. Some of them were demolished by freezing and thawing for hemolysis. Original blood samples and hemolyzed samples were mixed at the volume rate of 1 : 9 and 5 : 5. Their tHb concentrations were determined by using ABL77. Differently, 25 μl of 10%NaCl solution was added to the 1975 μl of blood samples at the volume rate of 1 : 79.
*Results and conclusion:* The mean concentration of tHb of original blood samples was 15.49 ± 1.24 g/dl. The tHb of hemolyzed blood samples was significantly lower; 12.09 ± 0.93 g/dl ($P < 0.05$). The tHbs of the mixture of the original samples and hemolyzed samples were 15.02 ± 1.06 g/dl (9 : 1) and 13.81 ± 0.80 g/dL (5 : 5). Dose of hemoglobin must not change by hemolysis. In the case of ABL77, however, intracellular electrolytes flow out by hemolysis, and the conductivity of blood solution may be changed. By addition of 10% NaCl solution, hemoblobin concentration should be diluted by 79/80. However, $Na^+$ increased to around 200 mmol/L, and tHb significantly decreased to 13.05 ± 1.04 g/dl ($P < 0.05$). In conclusion, we should take account of the condition of blood samples to measure tHb using electrical conductivity method.

## Free Paper Session 3 - Cardiothoracic and vascular anaesthesia and intensive care training program and more

O3-01

### The effect of a systematic educational programme in focused ultrasonography of the heart and pleura for anaesthesiologists

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*Introduction:* Focused ultrasonography is undergoing a rapid development especially in anaesthesiology and emergency care, but the training needed to achieve and maintain image acquisition skills is not described. The aim of this study was to examine the effect of a systematic educational programme in focused ultrasonography of the heart and pleura on the ability to produce images suitable for interpretation and retain this skill.
*Method:* Study-participants were twenty-five anaesthesiologists employed at the Regional Hospital of Randers, Denmark. These underwent an educational programme in Focused Assessed Transthoracic Echocardiography (FATE) comprising E-learning, hands-on FATE course and ten supervised examinations. Pre- and post-tests were performed in two healthy volunteers and systematically scored by a blinded FATE expert. The percentage of images suitable for interpretation was compared using a Wilcoxon signed rank test.
*Results:* Thirteen (52%) of participants were consultants, five (20%) were specialist registrars and seven (28%) were house officers. They had an average 14.5 (±10) years of medical experience. Twelve (50%) had previously attended a course in FATE or echocardiography. At baseline, 70% of images obtained by the study participants were usable for interpretation compared to 98% ($P < 0.001$) after the educational programme. Post-test was performed between 5 and 111 days from the last supervised examination – this did not affect interpretational value.
*Conclusion:* A systematic educational programme in focused cardiopulmonary ultrasonography significantly improved image acquisition in an unselected cohort of anaesthesiologists. Skills were retained for the whole study period of up to 3 months.

O3-02

### The anaesthetic management of a living donor renal transplantation with diaphragma paralysis following previous cardiac surgery. A case report

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Unilateral Diaghragmatic Paralysis (UDP) following cardiac surgery is not uncommon and cause deterioration of pulmonary functions and attendant pulmonary complications.

We report a case of patient with diaphragmatic paralysis after CABG operations who underwent living donor renal transplantation.

63 year old woman with UND after cardiac surgery and chronically renal failure underwent living donor renal transplantation. She was 156 cm and 54 kg and anuric for 2 years.

The anaesthetic plan of performing procedure under epidural anaesthesia after normal coagulasyon status. A right radial artery catheter was placed for continuous blood pressure monitoring. An 18 Gauge epidural catheter was threaded up to the length of four cm into epidural space with using loss of resistance technique at a level of the L3-4 (B Braun Medical, Melsungen Germany).The appropriate placement of the epidural catheter was verified by using separate test dose of lidocaine 2% (3 ml) and epinephrine 1/200.000 (3 ml) After insertion of epidural catheter %0.5 13 ml bupivacaine was injected through the catheter into the epidural space. 15 min after injection sensory block level was to T 8. A total of 3500 ml Ringer's Laktat was administered and blood loss was 600 ml. Urine output was started before ureter anastomosis.

UDP is more common than bilateral paralisis. Patients with diaphragm bilateral paralysis and respiratory insufficiency are generally treated with intermittent positive pressure ventilation. Central neuraxial blockade was chosen in the case to minimize the need for post operative ventilatory support associated with general anaesthesia.