and thrombosis due to blood-material contact. Specifically the ATH was attached to the PDMS using dopamine as a ‘bio-glue’.

Materials and methods PDMS discs were incubated in a solution of dopamine hydrochloride and then in ATH solution. A separate set of PDMS discs were justed incubated in ATH. Uptake of ATH and adsorption of antithrombin (AT) from plasma (a measure of anticoagulant activity) to the various surfaces was measured using 125I-labelled ATH and AT. Stability of ATH on surfaces was evaluated by measuring residual radioactivity after incubation in blood.

Results ATH uptake on PDMS was higher with dopamine as glue (Fig. 1), ~74% of the original ATH was lost from PDMS +ATH after 3 h in blood, whereas only ~30% was lost from PDMS +DOP + ATH.

The ATH surface with dopamine is adhesive, thus showed higher AT adsorption (42.3 ng/cm2) compared to PDMS (6.3 ng/cm2), and therefore should have higher anticoagulant activity.

Conclusions An antithrombin-heparin complex (ATH) was attached to PDMS using dopamine as a bio-glue. The use of dopamine gave surfaces with higher concentration and greater stability of ATH. The bound ATH showed potential for anticoagulant activity through extensive adsorption of antithrombin from plasma.

Poster abstracts

**PO-0760 RELIABILITY OF SINGLE-USE PEEP VALVES DURING MANUAL VENTILATION OF NEONATES**

IC Hartung, G Schmalisch, CC Roehr. Neonatology, Charité University Berlin, Berlin, Germany

10.1136/archdischild-2014-307384.1399

**Background** and aim Current guidelines recommend self-inflating bags (SIB), flow-inflating bags and T-piece resuscitators for manual ventilation of neonates. They further recommend the use of PEEP. Using a SIB, PEEP can be provided by attaching a PEEP valve to the device. These valves are mostly reusable items. However, several studies could show that multi-use PEEP valves could only deliver insufficient levels of PEEP and that their reliability was further decreased by repeated sterilisation cycles.

The aim of our study was to test whether single-use PEEP valves reliably delivered the set PEEP. The aim of our study was to test whether single-use PEEP valves reliably delivered the set PEEP.

**Methods** Ten new single-use PEEP valves from 5 different manufacturers (2 valves each from Laerdal (5–20 cmH2O), DROH (0–10 cmH2O), Vital Signs (5–20 cmH2O), medisize (5–20 cmH2O), Ambu (0–20 cmH2O)) were attached to an electromechanically driven SIB to ventilate a manikin simulating a 1 kg mechanically driven SIB to ventilate a manikin simulating a 1 kg preterm infant (PIP 20 cm H2O, RR 60/min). The delivered PEEP was measured and analysed.

**Results** The valves delivered a mean (SD) PEEP of 3.5 (1.9) cmH2O when set to 5 cmH2O and 5.6 (2.9) cmH2O when set to 10 cmH2O. One valve could not deliver any PEEP; the second valve from the same manufacturer could only deliver 0.0 (0.0) and 1.4 (0.0) cmH2O when set to 5 and 10 cmH2O, respectively.

**Conclusion** Single-use PEEP valves could be used as an alternative to multi-use items to avoid damage caused by repeated sterilisation procedures. However, they could not reliably deliver the set PEEP. Operators should be aware of the valves’ poor reliability and test them before each use.