the lung. In adult lungs, EMT is associated with fibrosis. In contrast, fetal tissue is capable of wound repair without scarring or fibrosis. We previously showed that MLE12 cells, similar to primary adult type II cells, undergo EMT with expression of mesenchymal cell phenotype after transforming growth factor beta (TGF β) 1 and epidermal growth factor (EGF) treatment. In contrast, fetal rat 21d type II cells did not undergo EMT with these treatments.

We hypothesize that ErbB receptors are important in the age-related regulation of EMT.

Methods: Primary isolated fetal d21 rat type II cells (>95% pure) were pretreated with cis-OH-proline to eliminate remaining fibroblasts, followed by a 5-day treatment with 2.5 ng/ml TGF β -1, 10ng/ml EGF, or both. Cells were then harvested for Western Blot analysis. MLE-12 cells were used as an adult lung epithelial cell model and treated similarly.

Results:

	MLE12 cells	Fetal Type II Cells
ErbB2 receptor	Increased receptor phosphorylation and protein expression after TGF β -1	Significantly decreased receptor phosphorylation (70%) and protein expression (81%) after TGF β -1
ErbB4 receptor	Significantly decreased phosphorylation (68%) and protein expression (85%) after TGF β -1	Significantly increased receptor phosphorylation and protein expression (130%) after TGF β -1

[ErbB expression after treatment]

Conclusions: These data suggest a mechanistic role of ErbB receptors in regulating the age-related induction of EMT.

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COMPARISON OF NORMAL SALINE, HYPERTONIC SALINE AND HYPERTONIC COLLOID RESUSCITATION FLUIDS IN AN INFANT ANIMAL MODEL OF HEMORRHAGIC-HYPOVOLEMIC SHOCK

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Background: Few studies have analyzed the effect of resuscitation fluid composition in infant animal models of hemorrhagic-hypovolemic shock. Our hypothesis was that hypertonic and hyperoncotic fluid will achieve goal-directed hemodynamic endpoints with less volume infusion than normal saline.

Methods: Prospective, randomized study in 34 two month-old piglets (9.9 $\pm$ 2kg). Following anaesthesia, paralysis and mechanical ventilation, hypovolemia was induced by controlled 30 ml/kg bleed. After 30 min, pigs were randomized to receive: Normal Saline (S0.9%) 30 ml/kg, n=11, Hypertonic 3% Saline (S3%) 15 ml/kg n=12, or Albumin 5% plus Hypertonic 3% Saline (A5%-S3%) 15 ml/kg, n=11. Hemodynamic (heart rate (HR), mean arterial pressure (MAP), cardiac index (CI)), brain tissue oxygenation by near infrared spectroscopy (bStO₂) and tissue perfusion (arterial lactate and gastric pHi) parameters were compared by ANOVA.

Results: 30 min. after bleeding, high baseline HR: 192 $\pm$ 37, and low MAP 72 $\pm$ 19 mmHg, CI 2.8 $\pm$ 1L/min/m², bStO₂: 44 $\pm$ 8%, gastric pHi 7.1 $\pm$ 0.2 and lactate 3.4 $\pm$ 2.3 mmol/L were recorded with non significant differences between groups. 30 min after infusion there were non significant differences between groups for HR (S0.9%: 188 $\pm$ 14, S3%: 184 $\pm$ 14, A5%-S3%: 151 $\pm$ 14 bpm); MAP (S0.9%: 80 $\pm$ 7, S3%: 86 $\pm$ 7, A5%-S3%: 87 $\pm$ 7 mmHg); CI (S0.9%: 4.9 $\pm$ 0.5, S3%: 5.1 $\pm$ 0.4, A5%-S3%: 5.3 $\pm$ 0.4 ml/ min/m²); lactate (S0.9%: 2.8 $\pm$ 0.7, S3%: 2.3 $\pm$ 0.6, A5%-S3%: 2.5 $\pm$ 0.6mmol/l); bStO₂ (S0.9%: 43.9 $\pm$ 2.2, S3%: 40.1 $\pm$ 2.5, A5%-S3%: 45.7 $\pm$ 2.3 %); and pHi (S0.9%: 7.07 $\pm$ 0.6, S3%: 7.25 $\pm$ 0.5, A5%-S3%: 7.23 $\pm$ 0.5).

Conclusion: In this model of pediatric hypovolemic shock, both hypertonic (S3%) and hyperoncotic (A5%- S3%) fluids achieved similar hemodynamic endpoints, requiring half of the volume compared to normal saline.