The pathogenesis of pulmonary hypoplasia and congenital diaphragmatic hernia (CDH) is unknown. CDH represents a spectrum of lung hypoplasia and consequent pulmonary hypertension (PH) that leads to high morbidity and mortality of patients. We studied neuroendocrine factors and retinoic acid in order to achieve the relation underlying them.

At 13.5 days post-conception normal and CDH lungs were cultured in vitro during four days with DMSO, retinoic acid, bombesin, ghrelin, bombesin antagonist and ghrelin antagonist. Morphometric analysis were done after the culture and Western Blot (WB) was performed to quantify the protein levels of retinoic acid receptors (RAR). Immunohistochemistry (IHC) was performed as well on normal, nitrofen and CDH E17.5 lungs.

When compared with controls, CDH lungs presented higher expression of RAR in IHC and WB. Moreover in normal lungs after the administration of bombesin and ghrelin the expression of RAR also increases and in case of retinoic acid administration it decreases. Regarding bombesin and ghrelin antagonists administration, RAR expression decreases as it was expected. In terms of morphometry, treated groups showed an increase in branch, perimeter and area.

This study, shows for the first time that retinoic acid deficit on CDH lungs is associated with neuroendocrine factors overexpression. Furthermore, neuroendocrine factors such as ghrelin and bombesin sensitise for RAR expression.

Conclusions

· Almost all the healthcare professionals surveyed were aware of the cricoid pressure technique.
· The majority felt that cricoid pressure has a role in improving glottis visualisation.
· One half found that it facilitated intubation.
· A minority felt that it helped to open the vocal cords during intubation.
· The high response rate provides an accurate reflection of neonatal intubation practice in Ireland.