

UPV and multi-organ tour, shock and sepsis

Multiorgan failure

- !!! Unfavorable effects of UPV on individually organs add up → fail often lungs , kidneys , liver , heart circulation ,...
- Can't to forget and effect of UPV on intracranial pressure (ICP) – acc type and " suitability " both " positive " and " negative "
- Influence on intra-abdominal pressure - it increases with everyone unfavorable consequences .

Influence on ICP

- At hypoventilation , hypoxia , hypercapnia with intracranial pressure fast increases .
- Monitoring Both SaO_2 and ETCO_2 are standard at acute treatment cranial accident / trauma .
- Ventilation with high PEEP (sometimes but otherwise cannot) increases risk difficult drain of blood from the brain → increase intracranial pressure .

Influence on intra-abdominal pressure

- Occurs with UPV to increase intrathoracic pressure (especially with PEEP) → transfer increased pressure on intra-abdominal compartment → increase intra-abdominal pressure gradually causes aggravated blood flow splanchnic including kidneys - worse drain + own influence pressure → failure mentioned organs .
- Condition can result in '*Abdominal Compartment Syndrome* - an analogy with a compartment syndrome e.g. _ on limbs .

Hypovolemic shock

- Increase intrathoracic pressure and shortage fluids will reduce venous return → decrease fulfillment just chambers → work will increase just chambers → lower shortage issue _ fluids and low venous return → decreases and fulfillment left chambers → cannot raise CO (minute volume) ($\text{CO} = \text{TOxTF}$) → circulation collapses .

Cordial issue and UPV and their influence on oxygenation organism

- By increasing saturation i pick up delivery oxygen to the organism by units % .
- By increasing Hb i pick up delivery oxygen to the organism by dozens % .
- By increasing CO I raise delivery oxygen by hundreds % .

→ $\text{DO}_2 [\text{ml/l}] = \text{CO} \times [(\text{Hb} \times \text{SaO}_2 \times 1,39) + (\text{PaO}_2 \times 0,003)]$,

→ **For good oxygenation peripheral tissue is needed not only Good ventilation (i.e. the way _ _ get oxygen to the blood), but also circulation (as get oxygen in the blood to the periphery).**

Sepsis and complications of UPV

- If the patient intubated as a result of ARDS at sepsis it often happens significantly dependent on PEEP and O_2 .
- !!! Attention on suction - either for example increase O_2 or to perform after suction recruitment maneuver .
- Frequent positioning on semi-hips , vibrating massages and RHC help significantly mobilization mucus .
 - * Retention there is frequent mucus the cause emergence stagnant pneumonia → patients with OTI and UPV are already after two days susceptible to emergence Fans pneumonia , the risk still multiplies , if introduced _ nasogastric or - jejunal probe .

Prevention emergence pneumonia

- Consistent toilet respiratory honor closed system .
- Special OTI cannulas with microcuff system (price !!!) .
- Consistent suction supraglottic space (if possible - price !!!) , otherwise suction secretions from the mouth .

- Consistent hygiene mouth (chlorhexidine).
- If already arises promptly react → RHC, ATB acc sensitivity .
- Regular subscriptions biological of material → closed system (sterile test tube which we will incorporate into the suction circuit), bronchoscopically carried out sampling → microbiology , microscopic higher _ (fast results !!!).
- Raised position _ upper by half bodies !!!

Continuous cleansing methods (CVVH) and UPV

- Contradiction between sufficient depth sedation to limit mobility (to ensure sufficient flow rate smooth and trouble-free dialysis) **X** as shallow as possible sedation and sufficient RHC required for mobilization of secretions , conservation muscular forces and the shortest possible UPV.

Literature

- PASSED, Paul, et al. *Basics artificial pulmonary ventilation*. 2. edition. Prague : Maxdorf, c2005. ISBN 80-7345-059-3.

Links

- Ventilation failure (pathophysiology)
- Syndrome acute respiratory distress
- Syndrome multiorgan dysfunction
- Hypovolemic shock
- Hemodialysis
- Intracranial hypertension
- Endotracheal intubation
- Artificial pulmonary ventilation / Secondary school (nurse)