**CONFIDENTIAL**



**Case Report Form**

**version 1.8**

Protective Ventilation with Higher versus Lower PEEP during one-lung ventilation for thoracic surgery

**Patient Serial Number** |\_\_|\_\_|\_\_**|**\_\_|\_\_|\_\_|

 c e n t e r p a t i e n t

**Date of assessment \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Local investigator 1 (intraoperative) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Local investigator 2 (postoperative) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**POSTOPERATIVE ASSESSMENT**

**Day 1**

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**POSTOPERATIVE DAY 1**

**(report events within first 24hrs after end of anesthesia/exit of OR if on mech. vent.)**

# 1 Recovery

|  |  |  |  |
| --- | --- | --- | --- |
| Lost to follow up | yes 🞎 no 🞎 | if yes  | discharged 🞎death🞎consent withdrawal 🞎other 🞎, specify: |
| Continuation of MV directly after surgery | yes 🞎 no 🞎 | if yes  | duration [hrs] | indication: |
| Indication hypothermia 🞎 bleeding 🞎 cardiovascular 🞎 respiratory failure🞎 other🞎,specify: |
| New requirement of NIV | yes 🞎 no 🞎 | if yes  | CPAP 🞎 NPPV 🞎other 🞎specify: | duration [hrs] |
|  |  |  | maximum intensity [pressure level]:  |
|  |  | indication | standard of care 🞎 resp. failure 🞎 other 🞎, specify: |
| New requirement of invasive MV | yes 🞎 no 🞎 | if yes  | duration [hrs] |  |
|  |  | indication | re-surgery 🞎 resp. failure 🞎 other 🞎 , specify: |
| unplanned ICU admission | yes 🞎 no 🞎 | if yes  | indication: |
| Physiotherapy | yes 🞎 no 🞎 |  |  |  |
| Breathing exercises | yes 🞎 no 🞎 | if yes  | incentive spirometry | yes 🞎 no 🞎 |
| Cumulated Ambulation Score [0-6]:  |
| Impairment of wound healing | yes 🞎 no 🞎 | if yes  | superficial 🞎 deep 🞎 |
| Surgical wound infection | yes 🞎 no 🞎 | if yes  | superficial 🞎 deep 🞎 |
|  |  | if yes | abscess 🞎 empyema 🞎 phlegmon 🞎 |
| Antibiotics | yes 🞎 no 🞎 | if yes, specify drug name: | prophylaxis 🞎 therapy 🞎 |
| PONV | yes 🞎 no 🞎 |  |  |  |
| Return of bowel function | yes 🞎 no 🞎 |  |  |  |

# 2 Fluids on day 1

**first 24hrs after end of anesthesia (exit of OR if on mech. vent.)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | *cumulative dose* |  |  | *cumulative dose* |
| Artificial | HES | yes 🞎 |  | Crystalloids [ml] | yes 🞎 |  |
| Colloids | Gelatine | yes 🞎 |  | Albumin (any concentration)[ml] | yes 🞎 |  |
| [ml] | Dextran | yes 🞎 |  | other, specify: | yes 🞎 |  |
|  | other, specify: | yes 🞎 |  |  |  |  |
|  | Dobutamine | yes 🞎 |  |  |  |  |  |
| Vaso-  | Ephedrine | yes 🞎 |  |  |  |  |  |
| active | Epinephrine | yes 🞎 |  |  |  |  |  |
| Drugs | Norepinephrine | yes 🞎 |  |  |  |  |  |
| [mg] | Phenylephrine | yes 🞎 |  |  |  |  |  |
|  | other | yes 🞎 |  |  |  |  |  |
|  | other | yes 🞎 |  |  |  |  |  |
|  | other: | yes 🞎 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

|  |
| --- |
| 3 Transfusion on day 1**first 24hrs after end of anesthesia (exit of OR if on mech. vent.)** |
|  | *cumulative dose(ml)* |  |  | *cumulative dose(ml)* |
| Packed red blood cells | yes 🞎 |  |  | Plasma | yes 🞎 |  |
| Autologous blood transfusion | yes 🞎 |  |  | Platelets | yes 🞎 |  |
|  |  |  |  |  |  |  |

|  |
| --- |
|  |

# 4 Actual organ function

|  |  |  |  |
| --- | --- | --- | --- |
| SpO2 supine position, upper body elevated 30-45°, 10 min in room air possible? | yes 🞎 no 🞎 | if yes  | SpO2 [%]: |
|  |  | if no  | SpO2 [%]: | **and** FiO2 [%]: |
| RR [/min] |
| HR [/min] | ABP mean [mmHg] |
| Temperature [°C] | tympanic 🞎 axillar 🞎 inguinal 🞎 oral 🞎 rectal 🞎 |
|  | other 🞎 | if other specify: |
| Airway secretion | yes 🞎 no 🞎 | if yes | purulent/yellow colour 🞎 not purulent 🞎 |
| VAS dyspnea [1-10cm] | VAS thoracic rest pain [1-10cm] |
|  | VAS coughing pain [1-10cm] |

# 5 Non-mandatory measurements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Laboratory tests** |  |  |
| **Chest X-ray** obtained | yes 🞎 no 🞎 | Hb | mmol/l 🞎 | g/dl 🞎 |
| if yes  |  | Hematocrit | % |  |
| Infiltrates (any side) | yes 🞎 no 🞎 | WBC  | GPt/L |  |
| pleural effusion (any side) | yes 🞎 no 🞎 | Platelets | GPt/L |  |
|  |  | INR |  |  |
| Atelectasis (any side) | yes 🞎 no 🞎 | PTT | sec |  |
| Pneumothorax (any side) | yes 🞎 no 🞎 | Creatinine | µmol/l 🞎 | mg/dl 🞎 |
| cardiopulmonary edema(any side) | yes 🞎 no 🞎 | BUN | mmol/l 🞎 | mg/dl 🞎 |
|  |  | ALT | µmol/s\*l 🞎 | U/L 🞎 |
|  |  | AST | µmol/s\*l 🞎 | U/L 🞎 |
|  |  | Bilirubin | µmol/l 🞎 | mg/dl 🞎 |
|  |  | CRP c-reactive protein | mg/l |  |
|  |  | Procalcitonin | ng/ml |  |

# 6 Pulmonary complications

|  |  |
| --- | --- |
| Aspiration pneumonitis resp. failure after inhalation of gastric contentsleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎 |
| Severe respiratory failure need for non-invasive or invasive mechanical ventilation due to poor oxygenation | yes 🞎 no 🞎 |
| Moderate respiratory failure SpO2<90% or PaO2<60mmHg for 10min in room air, responding to oxygen > 2l/min | yes 🞎 no 🞎 |
| ARDS according to Berlin definition | yes 🞎 no 🞎  | if yes |
| mild🞎 moderate🞎 severe🞎 |
| Pulmonary infection new/ progressive infiltrates + 2: antibiotics, fever, leukocytosis/ leucopenia and/or purulent secretionsleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Atelectasis lung opacification with shift of surrounding tissue/ organ towards the affected arealeft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Cardiopulmonary edema clinical signs of congestion + interstitial infiltrates/ increased vascular markings on chest X-ray, not explained by poor cardiac functionleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎  | yes 🞎 no 🞎  |
| Pleural effusion blunting of costophrenic angle (standing)/ hazy opacity in one hemithorax (supine) on chest X-ray, not explained by the preoperative patient condition aloneleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Pneumothorax free air in the pleural space on chest X-ray/ ultrasonic imagingleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎for this study, pneumothorax at the operated side will not be considered as a PPC; please mark anyway | yes 🞎 no 🞎  |
| Pulmonary infiltrates monolateral/ bilateral infiltrates without other clinical signsleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Prolonged air leakageAir leak requiring at least 7 days of postoperative chest tube drainageleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Purulent pleuritis Receiving antibiotics for a suspected infection, as far as not explained by the preoperative patient condition aloneleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Pulmonary Embolism As documented by pulmonary arteriogram or autopsy, or supported by a ventilation/perfusion radioisotope scans, or documented by echocardiography and receiving specific therapyleft 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |
| Lung haemorrhage Bleeding through the chest tubes requiring reoperation, or three or more red blood cell packs left 🞎 right 🞎 both🞎 cannot be differentiated 🞎 | yes 🞎 no 🞎  |

**Extended PPCs:**

|  |  |
| --- | --- |
| Bronchospasm newly expiratory wheezing treated with bronchodilators | yes 🞎 no 🞎 |
| Mild respiratory failure SpO2<90% or PaO2<60mmHg for 10min in room air, responding to oxygen ≤ 2l/min | yes 🞎 no 🞎 |

# 7 Extrapulmonary complications

|  |  |
| --- | --- |
| SIRS ≥2 findings: Temp < 36 0C or > 38 0C; HR > 90 bpm, RR > 20 bpm; WBC < 4.000 or > 12.000/µl | yes 🞎 no 🞎 |
| Sepsis SIRS in response to a confirmed infective process | yes 🞎 no 🞎 |
| Severe Sepsis Sepsis with organ dysfunction, hypoperfusion or hypotension  | yes 🞎 no 🞎 |
| Septic shock Sepsis with refractory hypoperfusion or hypotension despite adequate fluid resuscitation | yes 🞎 no 🞎 |
| Extrapulmonary infection wound infection + any other (extrapulmonary) infection | yes 🞎 no 🞎 |
| Coma Glasgow-Coma-Scale ≤ 8 without therapeutic coma/ sedatives | yes 🞎 no 🞎 |
| Acute myocardial infarction rise/ fall of cardiac markers + symptoms/ ECG changes/ /imaging of cardiac ischemia/sudden death | yes 🞎 no 🞎 |
| Acute renal failure **R**isk: Crea increased 1.5 times baseline or GFR decrease > 25% *or* urine output < 0.5 ml/kg/h within 6 hr **I**njury: Crea increased 2 times baseline or GFR decrease > 50% *or* urine output < 0.5 ml/kg/h within 12 hr **F**ailure: Crea increase 3 times baseline or GFR decrease > 75% *or* urine output < 0.3 ml/kg/h within 24 hr or anuria for 12 hrs **L**oss: complete loss of kidney function > 4 weeks(requiring dialysis) |
|  yes 🞎 no 🞎  | if yes | R 🞎 I 🞎 F 🞎 L 🞎 |
| Disseminated intravascular coagulation according to DIC score > 5 | yes 🞎 no 🞎 |
| StrokeNew clinical signs of stroke lasting > 24h + corresponding findings in radiologic imaging | yes 🞎 no 🞎 |
| Hepatic failure bilirubin > 2 mg/dL + elevation of ALT/AST + LDH x2 above normal values ALT/AST + LDH x2 above normal values | yes 🞎 no 🞎 |
| Gastrointestinal failure 1 = enteral feeding with under 50% of calculated needs or no feeding 3 days after surgery 2 = food intolerance (FI) *or* intra–abdominal hypertension (IAH) 3 = FI and IAH 4 = abdominal compartment syndrome (ACS) | yes 🞎 no 🞎 if yes1 🞎 2 🞎 3 🞎 4 🞎gastrointestinal bleeding 🞎 |

# 8 Adverse events (AE) / severe adverse events (SAE)

|  |  |  |  |
| --- | --- | --- | --- |
| Any adverse events  | yes 🞎 no 🞎 | if yes  | specify according to table: |
|  |  |  |  |
| Event (details, including treatment) | Severe AE | Causality | Severity | Outcome |
|  | yes 🞎no 🞎 | unrelated 🞎possible 🞎probable 🞎unassessable 🞎 | mild 🞎moderate 🞎severe 🞎unassessable 🞎 | resolved - no sequelae 🞎resolved - sequelae 🞎unresolved 🞎death 🞎unknown 🞎 |
|  | yes 🞎no 🞎 | unrelated 🞎possible 🞎probable 🞎unassessable 🞎 | mild 🞎moderate 🞎severe 🞎unassessable 🞎 | resolved - no sequelae 🞎resolved - sequelae 🞎unresolved 🞎death 🞎unknown 🞎 |
|  | yes 🞎no 🞎 | unrelated 🞎possible 🞎probable 🞎unassessable 🞎 | mild 🞎moderate 🞎severe 🞎unassessable 🞎 | resolved - no sequelae 🞎resolved - sequelae 🞎unresolved 🞎death 🞎unknown 🞎 |