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Top 10 ICU Checklist

1. ***Venous thromboembolism (VTE) prophylaxis*** – Most patients will need Heparin 5000 units SC q12h or Enoxaparin 40 mg SC q24h, unless they have a contraindication such as bleeding (or suspected bleeding e.g. decreasing Hb).

2. ***Stress ulcer prophylaxis (SUP)*** – Major risk factors for stress ulcers are mechanical ventilation and coagulopathy. Use pantoprazole 40 mg IV q24h (or H2 antagonist if available). STOP SUP when patient is discharged from the ICU. Only continue PPI/H2 antagonist upon discharge from ICU if patient is taking this chronically for another indication (e.g. GORD) or has a GI bleed in the ICU. (Key trial: *JAMA.* 2020;323(7):616-626)

3. ***Sedation, analgesia, delirium*** – Non-benzodiazepines (e.g. propofol, dexmedetomidine) are preferred. Benzodiazepines are associated with delirium and poor outcomes. There is no evidence that any opioid analgesic is better, but fentanyl infusion is common. Avoid using medications (e.g. haloperidol, atypical antipsychotics) for prevention of delirium. Dexmedetomidine may be useful for delirium when agitation is precluding weaning or extubation. Based on a small trial quetiapine is sometimes used for treatment of delirium. The trial used 50 mg q12h titrated up to 200 mg q12h (*Crit Care Med* 2010; 38:419–427). (Key guidelines: https://www.sccm.org/ICULiberation/Guidelines)

4. ***Drug interactions*** – Check all medications through an interaction software (UpToDate, Micromedex) to identify potential problems. Some medications that you need to watch out for are amiodarone, digoxin, antiepileptics, azole antifungals, neuroleptics, antibiotics, or anticoagulants.

5. ***Renal dose adjustment*** – Check if adjustment needed based on CrCL/eGFR for all medications. Antibiotics often require adjustment. If patient is on CRRT, dosing information is available in UpToDate, Sanford, eTG. The dosing recommendations are not always the same between sources. (Key article: Pharmacotherapy 2009;29(5):562–577). This review has recommendations for dosing of the most common medications based on type of CRRT (Table 4 in the article is a nice reference). Note – if CRRT is interrupted then dose regimen needs to be changed or held depending on clinical circumstances (this happens more often than you think).

6. ***Antibiotics*** – Empiric therapy based on eTG. However, broad spectrum use is common initially in the ICU when source of infection is unknown (e.g. vancomycin + piperacillin/tazobactam). Check cultures/sensitivities to determine if appropriate. Identify if de-escalation or cessation is possible each day. (Key guideline: https://www.sccm.org/SurvivingSepsisCampaign/Home)

7. ***Therapeutic drug monitoring*** – Check medications that require levels for monitoring and interpret for appropriateness. Vancomycin levels are most common. (Key guidelines released in 2020: https://www.idsociety.org/practice-guideline/vancomycin/). Bayesian monitoring is ideal to target 24-h AUC/MIC>400 mg*h/L. However, since we do not have access to Bayesian software, we target steady state trough of 15-20 mg/L as a surrogate. Refer to the eTG chapter on vancomycin for a quick review.

8. ***Vasopressors*** – noradrenaline infusion is preferred first-line agent for septic shock. Usually titrated to maintain a MAP>65 mm Hg. Adrenalin is used as a second agent but has more beta stimulation effects. Vasopressin is usually added on to noradrenalin when patient is not responding to noradrenalin alone. Dopamine should be avoided because of increased risk of arrhythmic effects (*NEJM* 2010; 362:779-789). Unlike other agents, vasopressin has minimal titration (0.01 to 0.03 units/min).

9. ***Stress dose steroids*** – Hydrocortisone 50mg IV q6h may be used for septic shock when a patient is refractory to vasopressor agents alone. The definition of 'refractory' is uncertain but some experts consider addition of a second vasopressor agent or a high noradrenalin dose requirement (>20 mcg/min) to meet this definition. Note that trials used it for 7 days and ceased without tapering. (Key trials: *NEJM* 2018; 378:797-808 & *NEJM* 2018; 378:809-818)

10. ***Blood glucose control*** – Blood glucose should be maintained <10 mmol/L. After this threshold, an insulin infusion may be needed per institutional protocols. (Key trial: *NEJM* 2009; 360:1283-1297)