**SAQ 26**

**References:** Tintinalli 7th ed, p. 515 to 516

Cameron 4th ed, p. 313 to 315

A 70 year-old man presents with infective exacerbation of severe chronic obstructive pulmonary disease (COPD). The patient has baseline chronic hypoxia and respiratory failure, leading to carbon dioxide retention. Complete the following table on features of treatment options for this patient’s respiratory condition. Assume there are no contraindications to each option. Use point form and/or short phrases. Each cell should have 3 items.

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| --- | --- | --- |
|  | **Advantages** | **Adverse Effects** |
| **Salbutamol** | Rapid bronchodilation  Ease of use, esp in nebulized form, repeat, titratable dosing possible  Versatile administration, with various routes: metered dose inhaler, nebulized, intravenous | Tachycardia / tachyarrhythmias  Hypokalaemia  Tremor / anxiety |
| **Prednisolone** | Anti-inflammatory effect reduces degree of bronchospasm – probably equal efficacy to parenteral steroids  Versatile dosing, dependent on previous dosing, illness severity and response to initial Rx  Widely available – patient may self-initiate Rx prior to hospital presentation | Immunosuppression – this patient likely to be on long term regime  Peptic ulcer disease  Hyperglycaemia and/or unstable blood glucose |
| **Magnesium** | Bronchodilator effect may potentiate actions of beta-2 agonists  Widely available, inexpensive, easy to administer  May be given as IV dose, precluding risk of aspiration, esp if patient on NIPPV | Hypotension  Hypermagnesaemia  CNS depression  (This list is long!) |
| **Non-invasive Positive Pressure Ventilation** | Well documented evidence that NIPPV reduces need for invasive endotracheal intubation and mortality  Reduces risk of hypoventilation secondary to high FiO2  Versatility in options: CPAP and BiPAP, each with varying pressures, titratable to clinical response | Uncomfortable, tight-fitting face mask reduces compliance  Risk of gastric aspiration  Baro/volutrauma – causing pneumothorax |

*3 marks for each cell, totaling 24.*

*Some cells have many more than 3 correct answers. A broad range is accepted, provided options have clinical relevance, and can be referenced. Sections on Mg is tougher, so leniency employed when marking that particular row.*

*Answers have to be applicable to THIS patient (as instructed), so answers such as “risk in pregnancy” or “compromises fertility” earn no marks.*

***All sections except for Mg considered easy. Borderline candidates expected to get at least 2 in each of these 6 cells. Therefore, overall borderline mark is 12/24.***