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COPD Exacerbations and management

COPD exacerbations and their management can be a source of great confusion for young clinicians. Who gets antibiotics and why? Who needs steroids? Which patients should or should not get ventilator support? With these questions and varying recommendations based largely on measures not often obtained in the ED (ie. FEV1 and/or FEV1/FVC), it's easy to see where the confusion may arise.

Much like with non-COPD patients, the cause of many upper respiratory complaints lies in the viral sector. Research indicates that invasive sampling of sputum indicates that common-cold causing viruses such as **rhinovirus, coronavirus, and parainfluenza cause the majority of infectious exacerbations along with H. influenzae, S. pneumoniae, and M. catarrhalis** making up about 50-60% of all COPD exacerbations, with less common organisms like Pseudomonas aeruginosa, S. aureus, and atypical bacteria (Mycoplasma, Chlamydia pneumonia) causing a minority of COPD exacerbations. Other minor exacerbation factors include concomitant CHF exacerbation, allergens, systemic infections, PE, and smoking often times make it somewhat difficult to pinpoint the exact cause of an acute exacerbation.

Fortunately there have been numerous studies to evaluate and stratify patients in both the acuity of their symptoms as well as their treatment guidelines. One such guideline that was formulated is the GOLD guidelines which were revised in 2014. In short, it categorizes patients into 4 levels (1=mild, 2=moderate, 3=severe, 4=very severe) based on their FEV1 and/or FEV1/FVC and gives recommendations accordingly. While this is helpful to physicians on the critical care side, for us not using these measures regularly it is necessary to develop a simple treatment plan based on the GOLD guidelines that we can adequately administer without knowing the FEV1 and FEV1/FVC values. The GOLD guidelines will be linked below but mainly recommend:

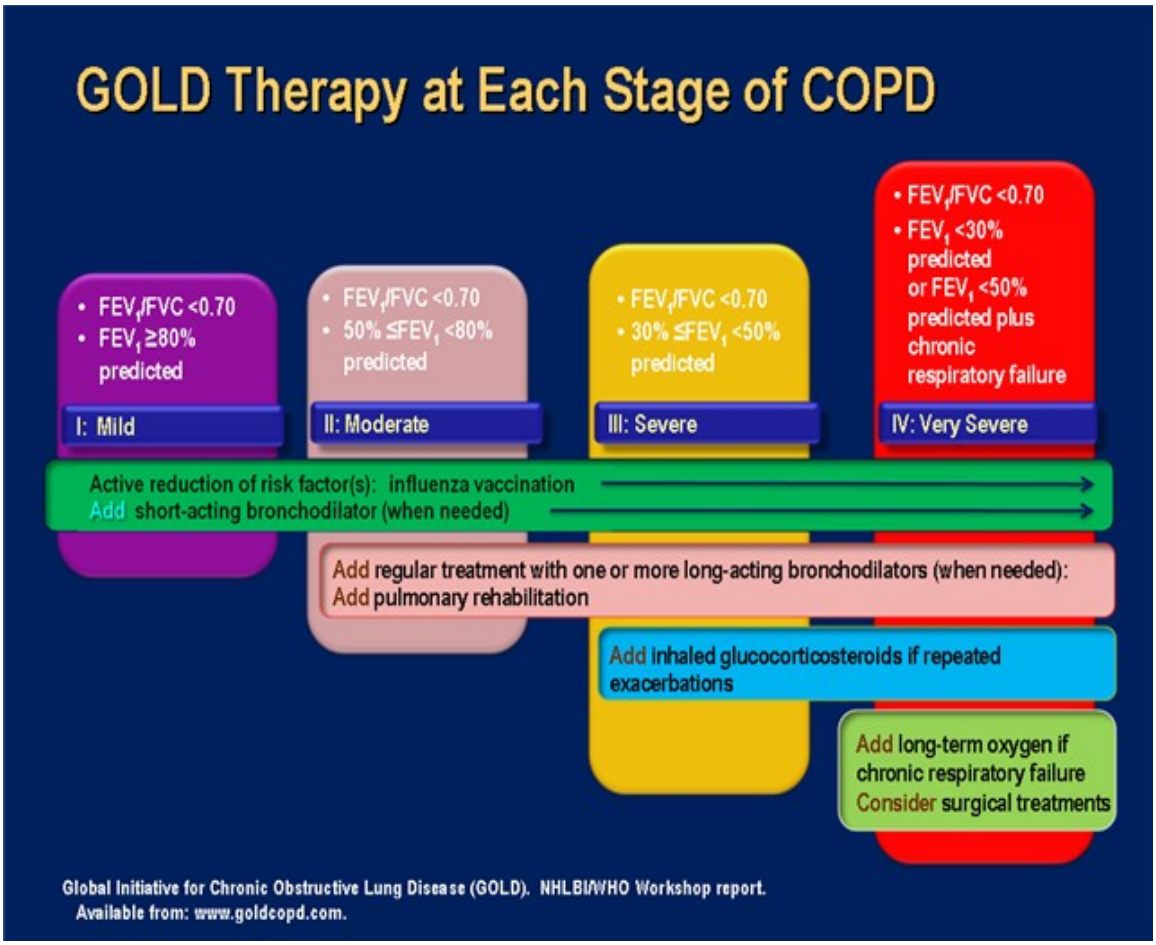
-**Increasing the dosage of short-acting bronchodilators** (i.e. albuterol and/or ipratropium).

-**Adding oral corticosteroids** if bronchodilators are not successful.

-Ventilatory support for respiratory failure only. A recent review showed that **non-invasive positive pressure ventilation is likely improving outcomes from COPD exacerbations** but that vent support should be reserved for respiratory failure.

-Consider theophylline for severe exacerbations.

The 2014 GOLD guidelines advise **treating most COPD exacerbations with 40 mg prednisone for 5 days**. This was a significant change from the previous recommendation of 10-14 days. The change was brought around in part by the REDUCE study in JAMA which suggested 5 days steroids is adequate treatment for COPD exacerbations, in most patients.



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