Update to text below Figure 1 – Therapy at Each Stage of COPD:

Bronchodilator drugs commonly used in treating COP include beta2-agonists, anticholinergics, and methylxanthines. The choice depends on the availability of the medications and the patient’s response. All categories of bronchodilators have been shown to increase exercise capacity in COPD, without necessarily producing significant changes in FEV1.

Regular treatment with long-acting bronchodilators is more effective and convenient than treatment with short-acting bronchodilators. Regular use of a long-acting beta2-agonist or a short- or long-acting anticholinergic improves health status. Treatment with a long-acting inhaled anti-cholinergic drug reduces the rate of COPD exacerbations and improves the effectiveness of pulmonary rehabilitation. Theophylline is effective in COPD, but due to its potential toxicity inhaled bronchodilators are preferred when available.

All studies that have shown efficacy of theophylline in COPD were done with slow-release preparations.

Combining bronchodilators of different pharmacological classes may improve efficacy and decrease the risk of side effects compared to increasing the dose of a single bronchodilator. A combination of a short-acting beta2-agonist and an anticholinergic produces greater and more sustained improvements in FEV1 than either drug alone and does not produce evidence of tachyphylaxis over 90 days of treatment.

The combination of a beta2-agonist, an anticholinergic, and/or theophylline may produce additional improvements in lung function and health status. Meaningful increases in lung function can be achieved following administration of inhaled anticholinergic plus sympathomimetic bronchodilators even in patients with moderate to severe COPD. Treatment with long-acting anticholinergic drug improves the effectiveness of pulmonary rehabilitation. Increasing the number of drugs usually increases costs, and an equivalent benefit may occur by increasing the dose of one bronchodilator when side effects are not a limiting factor.