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Title: Prevalence and impact of unrecognized COPD on elective surgery

Dr. Jill 17146 Ohar johar@wakehealth.edu MD , Dr. Angela 19454 Edwards afedward@wakehealth.edu MD , Mrs. Suzanne 19480 Howard showard@wakehealth.edu , Dr. Mathew 20924 Benshoff mbenshof@wakehealth.edu MD and Dr. James 20940 Donohue jdonohue@med.unc.edu MD . ¹ Internal Medicine - Pulmonary, Critical Care, Allergy & Immunologic Diseases, Wake Forest University School of Medicine, Winston Salem, NC, United States, 27157 ; ² Anesthesiology, Wake Forest University School of Medicine, Winston Salem, NC, United States, 27157 ; ³ Center for Genomics and Personalized Medicine Research, Wake Forest University School of Medicine, Winston Salem, NC, United States, 27157 ; ⁴ Anesthesiology, Wake Forest University School of Medicine, Winston Salem, NC, United States, 27157 and ⁵ Department of Medicine Division of Pulmonary Diseases and Critical Care Medicine, University of North Carolina Chapel Hill, NC, United States, 27599-7020 .

Body: Surgery patients with COPD have more episodes of post op bronchitis, pneumonia and longer length of stays (Manganas H 2007). NHANES data shows that less than 50% of patients with COPD are recognized. It is assumed that unrecognized COPD is less severe and therefore does not significantly affect perioperative morbidity. We aimed to determine the prevalence and effect of undiagnosed COPD on perioperative morbidity measured by hospital length of stay (LOS), in a population selected for COPD risk. Spirometry was performed in an at risk population (≥ 40 y.o. with a smoking history ≥ 20 pack-years) scheduled for elective surgery, during preoperative assessment (Ohar J 2011). Obstruction was defined by an FEV1/FVC $< 70\%$. Of the 199 subjects tested, 79 (40%) met spirometric criteria for obstruction. Only 9 of the 79 (11%) were previously recognized. Subjects with previously recognized COPD were older (75 ± 8 v. 66 ± 10 y.o.; $p < 0.05$), smoked more (90 ± 51 v. 49 ± 20 pack-years; $p < 0.0001$) and had more severe obstruction (50 ± 26 v. $69 \pm 17\%$ predicted; $p < 0.01$) than did those with previously unrecognized COPD, respectively. Despite the significant differences in previously recognized and unrecognized COPD, there was no difference between the two in LOS (1.8 ± 2.3 v. 1.9 ± 3.1 days; $p = 0.09$). LOS adjusted for procedure (actual/expected LOS) was also not significantly different (0.69 ± 0.43 and 0.99 ± 1.14 for recognized and unrecognized COPD, respectively; $p = 0.45$). Conclusion: The prevalence of unrecognized COPD among surgical patients is quite high and it appears to affect perioperative morbidity similarly to previously recognized COPD. The data suggests that spirometric testing of an at risk population for COPD may have value in preoperative assessment.