Perioperative Management of Sleep Apnea and Noninvasive Respiratory Management for the Hospitalist

2020-2023

References

- 1. Chung SA, Yuan H, Chung F. A systemic review of obstructive sleep apnea and its implications for anesthesiologists. *Anesth Analg.* 2008;107(5):1543-1563.
- 2. Finkel KJ, Searleman AC, Tymkew H, et al. Prevalence of undiagnosed obstructive sleep apnea among adult surgical patients in an academic medical center. *Sleep Med.* 2009;10(7):753-758.
- 3. Liao P, Yegneswaran B, Vairavanathan S, Zilberman P, Chung F. Postoperative complications in patients with obstructive sleep apnea: a retrospective matched cohort study. *Can J Anaesth.* 2009;56(11):819-828.
- 4. Hendrikx T, Sundqvist M, Sandstrom H, et al. Atrial fibrillation among patients under investigation for suspected obstructive sleep apnea. *PLoS One.* 2017;12(2):e0171575.
- 5. Frey WC, Pilcher J. Obstructive sleep-related breathing disorders in patients evaluated for bariatric surgery. *Obes Surg.* 2003;13(5):676-683.
- 6. Elmasry A, Lindberg E, Berne C, et al. Sleep-disordered breathing and glucose metabolism in hypertensive men: a population-based study. *J Intern Med.* 2001;249(2):153-161.
- 7. Logan AG, Perlikowski SM, Mente A, et al. High prevalence of unrecognized sleep apnoea in drugresistant hypertension. *J Hypertens*. 2001;19(12):2271-2277.
- 8. Hira HS, Sibal L. Sleep apnea syndrome among patients with hypothyroidism. *J Assoc Physicians India*. 1999;47(6):615-618.
- 9. Wetter DW, Young TB, Bidwell TR, Badr MS, Palta M. Smoking as a risk factor for sleep-disordered breathing. *Arch Intern Med.* 1994;154(19):2219-2224.
- 10. Singh M, Liao P, Kobah S, Wijeysundera DN, Shapiro C, Chung F. Proportion of surgical patients with undiagnosed obstructive sleep apnoea. *Br J Anaesth.* 2013;110(4):629-636.
- 11. Shahar E, Whitney CW, Redline S, et al. Sleep-disordered breathing and cardiovascular disease: cross-sectional results of the Sleep Heart Health Study. *Am J Respir Crit Care Med.* 2001;163(1):19-25.
- 12. Collop N. The effect of obstructive sleep apnea on chronic medical disorders. *Cleve Clin J Med.* 2007;74(1):72-78.
- 13. Gami AS, Howard DE, Olson EJ, Somers VK. Day-night pattern of sudden death in obstructive sleep apnea. *N Engl J Med.* 2005;352(12):1206-1214.
- 14. Peled N, Abinader EG, Pillar G, Sharif D, Lavie P. Nocturnal ischemic events in patients with obstructive sleep apnea syndrome and ischemic heart disease: effects of continuous positive air pressure treatment. *J Am Coll Cardiol*. 1999;34(6):1744-1749.
- 15. McEvoy RD, Antic NA, Heeley E, et al. CPAP for Prevention of Cardiovascular Events in Obstructive Sleep Apnea. *N Engl J Med.* 2016;375(10):919-931.
- 16. Peker Y, Glantz H, Eulenburg C, Wegscheider K, Herlitz J, Thunstrom E. Effect of Positive Airway Pressure on Cardiovascular Outcomes in Coronary Artery Disease Patients with Nonsleepy Obstructive Sleep Apnea. The RICCADSA Randomized Controlled Trial. Am J Respir Crit Care Med. 2016;194(5):613-620.
- 17. Mehra R, Benjamin EJ, Shahar E, et al. Association of nocturnal arrhythmias with sleep-disordered breathing: The Sleep Heart Health Study. *Am J Respir Crit Care Med.* 2006;173(8):910-916.
- 18. Becker HF, Koehler U, Stammnitz A, Peter JH. Heart block in patients with sleep apnoea. *Thorax.* 1998;53 Suppl 3:S29-32.

- 19. Szymanski FM, Filipiak KJ, Platek AE, et al. Presence and severity of obstructive sleep apnea and remote outcomes of atrial fibrillation ablations a long-term prospective, cross-sectional cohort study. *Sleep Breath*. 2015;19(3):849-856.
- 20. Deng F, Raza A, Guo J. Treating obstructive sleep apnea with continuous positive airway pressure reduces risk of recurrent atrial fibrillation after catheter ablation: a meta-analysis. *Sleep Med.* 2018;46:5-11.
- 21. Gottlieb DJ, Yenokyan G, Newman AB, et al. Prospective study of obstructive sleep apnea and incident coronary heart disease and heart failure: the sleep heart health study. *Circulation*. 2010;122(4):352-360.
- 22. Kaye DM, Mansfield D, Naughton MT. Continuous positive airway pressure decreases myocardial oxygen consumption in heart failure. *Clin Sci (Lond)*. 2004;106(6):599-603.
- 23. Kaye DM, Mansfield D, Aggarwal A, Naughton MT, Esler MD. Acute effects of continuous positive airway pressure on cardiac sympathetic tone in congestive heart failure. *Circulation*. 2001;103(19):2336-2338.
- 24. Yan AT, Bradley TD, Liu PP. The role of continuous positive airway pressure in the treatment of congestive heart failure. *Chest.* 2001;120(5):1675-1685.
- 25. Kaneko Y, Floras JS, Usui K, et al. Cardiovascular effects of continuous positive airway pressure in patients with heart failure and obstructive sleep apnea. *N Engl J Med.* 2003;348(13):1233-1241.
- 26. Mansfield DR, Gollogly NC, Kaye DM, Richardson M, Bergin P, Naughton MT. Controlled trial of continuous positive airway pressure in obstructive sleep apnea and heart failure. *Am J Respir Crit Care Med.* 2004;169(3):361-366.
- 27. Khayat RN, Abraham WT, Patt B, Roy M, Hua K, Jarjoura D. Cardiac effects of continuous and bilevel positive airway pressure for patients with heart failure and obstructive sleep apnea: a pilot study. *Chest.* 2008;134(6):1162-1168.
- 28. Yu J, Zhou Z, McEvoy RD, et al. Association of Positive Airway Pressure With Cardiovascular Events and Death in Adults With Sleep Apnea: A Systematic Review and Meta-analysis. *JAMA*. 2017;318(2):156-166.
- 29. Canet J, Gallart L, Gomar C, et al. Prediction of postoperative pulmonary complications in a population-based surgical cohort. *Anesthesiology.* 2010;113(6):1338-1350.
- 30. Canet J, Sabate S, Mazo V, et al. Development and validation of a score to predict postoperative respiratory failure in a multicentre European cohort: A prospective, observational study. *Eur J Anaesthesiol.* 2015;32(7):458-470.
- 31. Opperer M, Cozowicz C, Bugada D, et al. Does Obstructive Sleep Apnea Influence Perioperative Outcome? A Qualitative Systematic Review for the Society of Anesthesia and Sleep Medicine Task Force on Preoperative Preparation of Patients with Sleep-Disordered Breathing. *Anesth Analg.* 2016;122(5):1321-1334.
- 32. Kaw R, Pasupuleti V, Walker E, Ramaswamy A, Foldvary-Schafer N. Postoperative complications in patients with obstructive sleep apnea. *Chest.* 2012;141(2):436-441.
- 33. Chung F, Liao P, Elsaid H, Shapiro CM, Kang W. Factors associated with postoperative exacerbation of sleep-disordered breathing. *Anesthesiology*. 2014;120(2):299-311.
- 34. Memtsoudis S, Liu SS, Ma Y, et al. Perioperative pulmonary outcomes in patients with sleep apnea after noncardiac surgery. *Anesth Analg.* 2011;112(1):113-121.
- 35. Mokhlesi B, Hovda MD, Vekhter B, Arora VM, Chung F, Meltzer DO. Sleep-disordered breathing and postoperative outcomes after bariatric surgery: analysis of the nationwide inpatient sample. *Obes Surg.* 2013;23(11):1842-1851.
- 36. Memtsoudis SG, Stundner O, Rasul R, et al. The impact of sleep apnea on postoperative utilization of resources and adverse outcomes. *Anesth Analg.* 2014;118(2):407-418.

- 37. Chan MTV, Wang CY, et al. Association of Unrecognized Obstructive Sleep Apnea With Postoperative Cardiovascular Events in Patients Undergoing Major Noncardiac Surgery. *JAMA*. 2019;321(18):1788-1798.
- 38. Mutter TC, Chateau D, Moffatt M, Ramsey C, Roos LL, Kryger M. A matched cohort study of postoperative outcomes in obstructive sleep apnea: could preoperative diagnosis and treatment prevent complications? *Anesthesiology*. 2014;121(4):707-718.
- 39. Wong JK, Maxwell BG, Kushida CA, et al. Obstructive Sleep Apnea Is an Independent Predictor of Postoperative Atrial Fibrillation in Cardiac Surgery. *J Cardiothorac Vasc Anesth.* 2015;29(5):1140-1147.
- 40. Abdelsattar ZM, Hendren S, Wong SL, Campbell DA, Jr., Ramachandran SK. The Impact of Untreated Obstructive Sleep Apnea on Cardiopulmonary Complications in General and Vascular Surgery: A Cohort Study. *Sleep.* 2015;38(8):1205-1210.
- 41. Mokhlesi B, Hovda MD, Vekhter B, Arora VM, Chung F, Meltzer DO. Sleep-disordered breathing and postoperative outcomes after elective surgery: analysis of the nationwide inpatient sample. *Chest.* 2013;144(3):903-914.
- 42. Adesanya AO, Lee W, Greilich NB, Joshi GP. Perioperative management of obstructive sleep apnea. *Chest.* 2010;138(6):1489-1498.)
- 43. Taylor S, Kirton OC, Staff I, Kozol RA. Postoperative day one: a high risk period for respiratory events. *Am J Surg.* 2005;190(5):752-756.
- 44. Gupta RM, Parvizi J, Hanssen AD, Gay PC. Postoperative complications in patients with obstructive sleep apnea syndrome undergoing hip or knee replacement: a case-control study. *Mayo Clin Proc.* 2001;76(9):897-905.
- 45. O'Keeffe T, Patterson EJ. Evidence supporting routine polysomnography before bariatric surgery. *Obes Surg.* 2004;14(1):23-26.
- 46. American Society of Anesthesiologists Task Force on Perioperative Management of patients with obstructive sleep a. Practice guidelines for the perioperative management of patients with obstructive sleep apnea: an updated report by the American Society of Anesthesiologists Task Force on Perioperative Management of patients with obstructive sleep apnea. *Anesthesiology*. 2014;120(2):268-286.
- 47. Chung F, Chau E, Yang Y, Liao P, Hall R, Mokhlesi B. Serum bicarbonate level improves specificity of STOP-Bang screening for obstructive sleep apnea. *Chest.* 2013;143(5):1284-1293.
- 48. Netzer NC, Stoohs RA, Netzer CM, Clark K, Strohl KP. Using the Berlin Questionnaire to identify patients at risk for the sleep apnea syndrome. *Ann Intern Med.* 1999;131(7):485-491.
- 49. Chung F, Yegneswaran B, Liao P, et al. STOP questionnaire: a tool to screen patients for obstructive sleep apnea. *Anesthesiology*. 2008;108(5):812-821.
- 50. Chung F, Subramanyam R, Liao P, Sasaki E, Shapiro C, Sun Y. High STOP-Bang score indicates a high probability of obstructive sleep apnoea. *Br J Anaesth*. 2012;108(5):768-775.
- 51. Chung F, Yang Y, Liao P. Predictive performance of the STOP-Bang score for identifying obstructive sleep apnea in obese patients. *Obes Surg.* 2013;23(12):2050-2057.
- 52. Chiu HY, Chen PY, Chuang LP, et al. Diagnostic accuracy of the Berlin questionnaire, STOP-BANG, STOP, and Epworth sleepiness scale in detecting obstructive sleep apnea: A bivariate meta-analysis. *Sleep Med Rev.* 2017;36:57-70.
- 53. Chung F, Abdullah HR, Liao P. STOP-Bang Questionnaire: A Practical Approach to Screen for Obstructive Sleep Apnea. *Chest.* 2016;149(3):631-638.
- 54. Lockhart EM, Willingham MD, Abdallah AB, et al. Obstructive sleep apnea screening and postoperative mortality in a large surgical cohort. *Sleep Med.* 2013;14(5):407-415.
- 55. Corso RM, Petrini F, Buccioli M, et al. Clinical utility of preoperative screening with STOP-Bang questionnaire in elective surgery. *Minerva Anestesiol.* 2014;80(8):877-884.

- 56. Chong CT, Tey J, Leow SL, et al. Management plan to reduce risks in perioperative care of patients with obstructive sleep apnoea averts the need for presurgical polysomnography. *Ann Acad Med Singapore*. 2013;42(3):110-119.
- 57. Nagappa M, Mokhlesi B, Wong J, Wong DT, Kaw R, Chung F. The Effects of Continuous Positive Airway Pressure on Postoperative Outcomes in Obstructive Sleep Apnea Patients Undergoing Surgery: A Systematic Review and Meta-analysis. *Anesth Analg.* 2015;120(5):1013-1023.
- 58. O'Gorman SM, Gay PC, Morgenthaler TI. Does autotitrating positive airway pressure therapy improve postoperative outcome in patients at risk for obstructive sleep apnea syndrome? A randomized controlled clinical trial. *Chest.* 2013;144(1):72-78.
- 59. Liao P, Luo Q, Elsaid H, Kang W, Shapiro CM, Chung F. Perioperative auto-titrated continuous positive airway pressure treatment in surgical patients with obstructive sleep apnea: a randomized controlled trial. *Anesthesiology*. 2013;119(4):837-847.
- 60. Liao P, Wong J, Singh M, et al. Postoperative Oxygen Therapy in Patients With OSA: A Randomized Controlled Trial. *Chest.* 2017;151(3):597-611.
- 61. Chung F, Memtsoudis SG, Ramachandran SK, et al. Society of Anesthesia and Sleep Medicine Guidelines on Preoperative Screening and Assessment of Adult Patients With Obstructive Sleep Apnea. *Anesth Analg.* 2016;123(2):452-473.
- 62. Green BT, Broughton WA, O'Connor JB. Marked improvement in nocturnal gastroesophageal reflux in a large cohort of patients with obstructive sleep apnea treated with continuous positive airway pressure. *Arch Intern Med.* 2003;163(1):41-45.
- 63. Memtsoudis SG, Cozowicz C, et al. Society of Anesthesia and Sleep Medicine Guideline on Intraoperative Management of Adult Patients with Obstructive Sleep Apnea. *Anesth Analg.* 2018;127(4):967-987.
- 64. Nuckton TJ, Glidden DV, et al. Physical examination: Mallampati score as an independent predictor of obstructive sleep apnea. *Sleep*. 2006;29(7):903-908.