44391 - WHAT IS THE BEST SCREENING QUESTIONNAIRE FOR OBSTRUCTIVE SLEEP APNEA?

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Introduction: Obstructive sleep apnea (OSA) is a medical condition that may be associated with an increased risk of perioperative morbidity and mortality. Polysomnography (PSG) is the gold standard in diagnosing OSA. Presently patients with Apnea Hypopnea Index (AHI)>5/hr are identified as having OSA(1). As PSG is not always feasible, anesthesiologists need a quick and reliable screening instrument to identify OSA patients. Presently three screening tools are available for anesthesiologists – Berlin Questionnaire (BQ), ASA checklist and our newly developed OSA questionnaire (OSAQ). The purpose of this study was to validate the BQ, ASA checklist and OSAQ with PSG data and to determine the best screening tool for OSA in surgical patients.

Methods: Hospital ethics approval and informed consent was obtained from eligible patients. Inclusion criteria were preadmission clinic patients ASA I-IV. Exclusion criteria were patients <18 years. BQ is a 9 item questionnaire validated in primary care where patients answer questions regarding snoring behavior, wake-time sleepiness or fatigue, obesity and hypertension. ASA checklist is a 14 point checklist encompassing characteristics and symptoms of OSA. OSAQ is a concise screening tool we designed consisting of 4 questions regarding snoring, fatigue, hypertension and cessation of breathing. Patients answered BQ and OSAQ themselves in a form while ASA checklist was administered by the research assistant who was blinded to the result of questionnaires. The patients had PSG where AHI, SaO₂ and quality of sleep were recorded. Validity of BQ, ASA checklist, and OSAQ were assessed by comparing the sensitivity, specificity, positive predictive values (PPV) and negative predictive values (NPV) with AHI as the gold standard. McNemar's test was used to analyse the agreement between the 3 methods and PSG data.

Results: 141 patients were studied with the BQ, ASA checklist, OSAQ, and PSG. 98 patients had an AHI>5/hr, number of patients screened high risk by BQ, ASA checklist and OSAQ were 61% (86/141), 64% (90/141) and 59% (83/141) respectively. 141 patients completed the study. Mean age 57 ± 14 years, 51% male, 49% female and ASA I: 7.1%, II:53.9%, III: 38.3%, IV: 0.7%. The results of sensitivity, specificity, PPV and NPV of BQ, ASA checklist, OSAQ at AHI>5/hr is shown in table. Using McNemar's test all three tests agreed with AHI in diagnosing OSA patients (p<0.05).

Discussion: Using PSG as the gold standard in OSA diagnosis, the three questionnaires have been validated for its use among surgical population. The concise OSAQ is the best of the three questionnaires.

Reference:

1. Anesthesiology 2006, 104:1081-93

Table – Comparison between three questionnaires at screening OSA (AHI>5)

	Sensitivity	Specificity	PPV	NPV
BQ	0.66	0.51	0.76	0.40
ASA Checklist	0.64	0.37	0.70	0.31
OSAQ	0.65	0.56	0.77	0.41