

Sleep and Disease Activity in Inflammatory Bowel Disease

Authors Names: Kendra Kamp, Linda Yoo, Robert Burr, Kindra Clark-Snustad, Diana Buchanan, Jeffery Jacobs, Mitra Barahimi, Margaret Heitkemper, Scott Lee

Background: Among patients with inflammatory bowel disease (IBD) self-reported sleep disturbances are associated with active clinical disease. IBD sleep studies have yet to consider the discrepancies that exist between clinical and endoscopic disease measures. The purpose of this pilot study was to examine objective and self-reported sleep based on endoscopic and clinical disease activity among patients with IBD.

Methods: Patients with IBD were recruited from a single medical center. Patients ages 18-55 with a scheduled endoscopy were included. Participants wore a wrist actigraph for 10 days, and answered baseline demographic, clinical disease activity, and sleep questionnaires including the Pittsburg Sleep Quality Index (PSQI) and the PROMIS sleep disturbance and sleep-interference questionnaires where higher scores indicate greater sleep/wake disturbances. Endoscopic disease activity (Mayo or Simple Endoscopic Score) were obtained from the medical record.

Results: The study included 27 participants, mean age of 33.3 (SD: 8.2) years and disease duration of 11 (SD: 7.2) years. The sample predominantly had Crohn's disease (75%). The average total nighttime sleep was 440 minutes (SD: 54) and average sleep efficiency was 84% (SD: 6). Abnormal PSQI was found in 30% of patients with active endoscopic disease and 70% of patients with inactive endoscopic disease ($p=0.04$). PSQI did not differ based on clinical disease activity ($p=0.99$). Patients with active endoscopic disease had lower self-reported sleep disturbance (49.2 vs 52.6, $D=-0.53$) and sleep-related impairment (49.7 vs. 56.6, $D=-0.71$) compared to those with inactive endoscopic disease. Patients with active clinical disease had higher self-reported sleep disturbance (57.3 vs. 49.7, $D=1.28$) and sleep-related impairment (58.1 vs. 52.8, $D=0.51$) compared to those with inactive clinical disease.

Conclusion: Self-reported sleep and disease activity differs based on the measure of disease activity. Patients with active clinical disease have poorer self-reported sleep whereas patients with active endoscopic disease appear to have better self-reported sleep. Further research is needed to better characterize the relationship between sleep and disease activity, and determine the underlying mechanisms related to poor sleep in the IBD population.