

Association between radiotherapy and obstructive sleep apnea in cancer patients: A systematic review and meta-analysis.

Background: With the increase in survival of cancer patients, consequently, increasing their quality of life is mandatory as well. Sleep disturbances, particularly Obstructive Sleep Apnea (OSA), is one of the main complaints of cancer patients in which patients face frequent episodes of upper airway closure during sleep. Possible causes for OSA include either the specific cancer or its treatment whether sedatives, narcotics, radiotherapy, or chemotherapy, but the primary cause is still hard to prove. Our aim was to investigate the association between the occurrence of OSA and radiotherapy in cancer patients. **Methods:** On the 9th of September, 2018, we have searched comprehensively 12 electronic databases to retrieve relevant studies. All eligible studies that assess the association between OSA and radiotherapy in cancer patients were included in our meta-analysis. Quality assessment of included studies was done using the NIH tool for cohort and cross-sectional studies. **Results:** Fourteen studies met our selection criteria, eight studies were eligible for our meta-analysis. There was a positive association between the occurrence of OSA and radiotherapy in cancer patients (OR 1.16, 95% CI [0.52–2.56]; $P = 0.718$). OSA was noted in 103 of 181 cancer patients who received radiotherapy, yielding a remarkable overall prevalence of 63% (95% CI [0.36–0.85]; $P = 0.343$). A positive risk ratio for the development of OSA in cancer patients treated with radiotherapy was detected (RRs 1.27, 95% CI [0.81–2.00]; $P = 0.297$). The overall mean of apnea hypopnea index (AHI) for patients with OSA in six studies was 22.45. **Conclusions:** These findings point to a striking association between OSA risk and radiotherapy in cancer patients. Since

the early recognition and management of OSA in such patients may play an important role in improving their quality of life, we recommend screening all cancer patients treated with radiation for early signs of OSA to further improve their survival.