

## **Polycystic Ovarian Syndrome and Obstructive Sleep Apnea: A Dynamic Duo for Cardiorenal Risk?**

Michaela Nelsen DO '26<sup>1</sup>, Noah Marcus PhD<sup>1</sup>

*<sup>1</sup>Des Moines University Medicine and Health Sciences, Des Moines IA*

Polycystic ovarian syndrome (PCOS) is an endocrine disorder that impacts women of reproductive age, with an estimated prevalence as high as 20%. PCOS is associated with obesity, hypertension, and in some studies chronic kidney disease (CKD). The pathophysiological nature of these relationships is complex and incompletely understood, but studies show a high prevalence of co-morbid Obstructive Sleep Apnea (OSA) in women with PCOS. Given that OSA is independently associated with the development of hypertension, glomerular dysfunction, and proteinuria we hypothesize that OSA in women with PCOS contributes to or exacerbates the development of renal damage, hypertension, and progression of CKD. A review of the literature was performed using the National Library of Medicine. Articles published between January 1998 and July 2023 were selected for review. Randomized controlled trials, reviews, and systematic reviews were all included. Search terms include 'polycystic ovarian syndrome', 'obstructive sleep apnea', 'chronic kidney disease', 'cardiovascular risk', and 'hypertension. We found that women with PCOS and OSA have higher blood pressure and an increased risk of negative cardiovascular outcomes. In patients with PCOS high levels of urinary albumin excretion were noted as well as increased intraglomerular pressure, and microalbuminuria. OSA was also found to be associated with poor renal function, albuminuria, and decreased glomerular filtration rate. Potential pathophysiological links are discussed in greater detail in the poster presentation. More research is needed to determine if co-morbid PCOS and OSA results in greater risk for hypertension and CKD and should address underlying pathophysiological mechanisms.