

Press Information

August 25th, 2009

Professional societies in the field of cardiology and endocrinology acknowledge the link between sleep disordered breathing, cardiovascular and metabolic disease

Eindhoven, the Netherlands

Sleep Disordered Breathing (SDB) describes two main groups of abnormal breathing during sleep: Obstructive Sleep Apnoea (OSA) and Central Sleep Apnoea (CSA). OSA is characterised by repetitive closure and narrowing of the upper airway (UA) during sleep with associated respiratory efforts. CSA is characterized by repetitive cessation of breathing during sleep without respiratory effort. Another breathing abnormality called Cheyne Stokes Respiration (CSR) is characterised by waxing and waning of breathing during sleep.

Research over the last 10 years suggests that the number of patients with SDB is higher than usual amongst those with cardiovascular and metabolic disease, and that treating this condition may improve their long-term clinical outcome. However, as these studies were published by Sleep Specialists, awareness of this was low amongst the cardiology and endocrinology communities. More recently, professional societies in the field of cardiology and endocrinology such as the European Society of Cardiology (ESC) and International Diabetes Federation (IDF) have started to acknowledge these links and, accordingly, interest has started to increase amongst these communities.

Obstructive Sleep Apnoea and Cardiovascular Disease

Research suggests that patients with OSA and normal blood pressure are at greater risk of developing hypertension within four years(1), increasing their chances of developing other heart diseases and suffering a stroke.

Approximately 11-38% of patients with established heart failure have predominant OSA and successful treatment of this condition may improve the function of their heart and long-term survival (2-4).The accepted treatment for OSA is Continuous Positive Airway Pressure (CPAP). CPAP keeps the airway open during sleep by providing them pressurised air via the nose or mouth. In accordance with the evidence, the ESC recommended, in their guidelines for the diagnosis and treatment of acute and chronic heart failure published in 2008, that;

“Treatment with a CPAP should be considered in OSA documented by polysomnography“ (5)

Obstructive Sleep Apnoea and Type 2 Diabetes

Approximately 40% of people with OSA have type 2 diabetes (T2DM) (6;7) and the prevalence of OSA amongst patients with T2DM could be as high as 23% (8). OSA may have effects on glycaemic control in people with T2DM and treating this condition may improve quality of life and blood pressure control. Additional benefits on glycaemic control and cardiovascular risk have been suggested (9).

To ensure these patients receive the best possible management, the IDF recommends that clinical practices are adopted in the sleep lab and endocrinology department to ensure that an individual presenting with one condition is also screened for the other (10).

"Type 2 diabetes (T2DM) and Obstructive Sleep Apnoea (OSA) are strongly related to obesity, but co-exist much more frequently than expected, suggesting they are closely linked. OSA affects up to 4% of the adult population. People with OSA are more likely to be hypertensive, insulin resistant and have type 2 diabetes, which may affect up to 40% of people with OSA. Likewise, nearly a quarter of people with T2DM will have sleep apnoea. Treatment of OSA with continuous positive airway pressure ventilation (CPAP) lowers blood pressure and may improve diabetes control. Weight loss will benefit both conditions. The IDF position statement highlights the importance of ensuring that those caring for people with T2DM or sleep apnoea are aware of the association and consider the possibility that the other condition may exist so that an accurate diagnosis can be made and effective treatment instituted" Prof Wilding, University Hospital Aintree, Liverpool.

Heart Failure and Cheyne Stokes Respiration

Central Sleep Apnoea / Cheyne Stokes Respiration (CSA/CSR) occur secondary to heart failure. Evidence suggest that 33-42% of patients with heart failure have predominant CSA/CSR (2-4). The presence of CSA/CSR infers an increased cardiovascular risk in these patients (11;12) but successful elimination of these breathing abnormalities may improve cardiac function and transplant free survival (13).

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