[gw22-e0159]

EFFECTS OF OBSTRUCTIVE SLEEP APNOEA AND ITS TREATMENT ON CARDIOVASCULAR RISK IN CAD PATIENTS

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10.1136/heartjnl-2011-300867.395

Objective This study, in optimally treated CAD patients with newly diagnosed OSA, focused on (1) The relationships between OSA and serum biomarkers of four potential pathways of cardiovascular injury in OSA: high-sensitivity C reactive protein (hs-CRP), endothelin-1 (ET-1), N-terminal pro B type natriuretic peptide (NT-proBNP) and fibrinogen; and (2) The effect of continuous positive airway pressure (CPAP) therapy on these markers.

Methods One hundred and fifty one Chinese patients with proven CAD and standard medication were enrolled. After polysomnography, patients were classified into four groups according to apnoea-hypopnoea index (AHI): no OSA (n=25); mild OSA (n=50); moderate OSA (n=43); severe OSA (n=33). Morning levels of hs-CRP, ET-1, NT-proBNP and fibrinogen were assayed and repeated in severe OSA patients after 3-months CPAP treatment.

Results Hs-CRP was greater in patients with severe OSA than those with no OSA or mild OSA (p=0.001, p=0.003; respectively). After adjustment for confounders, the hs-CRP levels correlated most strongly with AHI and oxygen desturation index (ODI) (r=0.439, p<0.001; r=0.445, p<0.001; respectively). In stepwise multiple linear regressions, the strongest predictor of hs-CRP levels was ODI (p<0.001). After 3 months of CPAP treatment, the hs-CRP levels deceased (p=0.005) in CAD patients with severe OSA.

Conclusions In CAD patients on current optimal medications, hs-CRP is significantly correlated with the severity of OSA, and the elevated hs-CRP levels can be decreased by CPAP. This suggests that OSA could activate vascular inflammation in CAD patients despite current best practice medications.