ASSESSMENT OF THE CAROTID ARTERY STATE IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME USING THE CAROTID DUPLEX

Thesis

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LIST OF ABBREVIATIONS

ACAT	Acyl-COA cholesterol acyltransfrase
AHI	Apnea hypopnea index
ALOD	Average low oxygen of all desaturation
ANP	Atrial natriuretic peptide
ASDA	American sleep disorder association
BHI	Breath holding index
BHR	Basal heart rate
BiPAP	Bilevel positive airway pressure
BMI	Body mass index
CBFV	Cerebral blood flow velocity
CCA	Common carotid artery
CHF	Congestive heart failure
CNS	Central nervous system
CRF	Chronic renal failure
CSA	Central sleep apnea
CT	Computed tomography
CVS	Cardiovascular system
DI	Desaturation index
ECA	External carotid artery
ECG	Electrocardiogram
EDS	Excessive daytime sleepiness
EMG	Electromyogram
EOG	Electrooculogram
ESG	Electroencephologram

FFA	Free fatty acid
FH	Familial hypercholestrolaemia
FRC	Functional residual capacity
HAL	Hepatic acylglycerol lipase
HCT	Haematocrit
HDL	High density lipoprotein
HRT	Hormonal replacement therapy
HTN	Hypertension
ICA	Internal carotid artery
ICAM	Intracellular adhesion molecule
ICSD	International classification of sleep disorder
IHD	Ischemic heart disease
IMT	Intima media thickness
LCAT	Lectithin-cholesterol acyltransferase
LDL	low density lipoprotein
LPL	Lipoprotein lipase
MRAs	Mandibular repositioning appliances
MRI	Magnetic resonance imaging
MSLT	Multiple sleep latency test
MWT	Maintenance of wake fullness test
nCPAP	Nasal continuous positive airway pressure
NREM	Non rapid eye movement
OA	Oral appliance
OSAHS	Obstructive sleep apnea-hypopnea syndrome
OSAS	Obstructive sleep apnea syndrome
OSH	Obstructive sleep hypopnea
P_aO_2	Alveolar oxygen tension

PCO_2	Carbon dioxide tension
PHT	Pulmonary hypertension
PSG	Polysomnography
PVC	Premature ventricular contraction
RDI	Respiratory disturbance index
REM	Rapid eye movement
RERA	Respiratory effort-related arousal
S_aO_2	Arterial oxygen saturation
SDB	Sleep disorder breathing
SWS	Slow wave sleep
TCD	Transcranial Doppler
TG	Triglycerides
TIA	Transient ischemic attack
TRD	Tongue-retaining device
TSH	Thyroid stimulating hormone
TST	Total sleep time
UARS	Upper airway resistance syndrome
UPPP	Uvulopalatophrayngioplasty
VCAM	Vascular cell adhesion molecule
VLDL	Very low density lipoprotein

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INTRODUCTION

Obstructive sleep apnea syndrome is the periodic reduction (hypopnea) or cessation of breathing (apnea) due to narrowing of the upper airways during sleep. The main symptom is daytime sleepiness, and it's thought to be a cause of premature death, hypertension, ischemic heart disease, stroke and road traffic accident ***(Douglas, 1994; Simonds, 1994).***

Obstructive sleep apnea syndrome (OSAS) is associated with increased cardiovascular morbidity and mortality ***(Schulz et al., 2005).*** Epidemiological studies have suggested a pathphysiological link between sleep apnea syndrome and cerebrovascular disease. The mechanism by which sleep disorder can affect the predisposition to developing stroke is not clear ***(Silvestrini et al., 2002).***

The oxygen desaturation accompanying apneic events can promote degenerative changes at the level of arterial walls ***(Gainer, 1987).*** This fact suggests that the link between obstructive sleep apnea and stroke could be due, at least in part, to an increase in the progression of atherosclerosis process at the level of cerebral arteries ***(Silvestrini et al., 2002).***

Remzi et al. (2005), suggested that patients with O.S.A.S. have higher predisposition to developing atherosclerotic degeneration in the carotid arteries which seem to be independent of the coexistence of classic risk factors (i.e hypertension, diabetes mellitus, and hypercholesterolemia).

Ultrasonographic examination of the cerebral arteries is a simple and non invasive method for quantifying subclinical arterial wall thickening and atherosclerosis progression ***(Kaynak et al., 2003).***