

IS URIC ACID A MARKER IN OBSTRUCTIVE SLEEP APNEA SYNDROME?

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INTRODUCTION

Uric acid is a strong and independent marker of morbidity and mortality in clinical conditions such as cardiovascular diseases, CRF, metabolic syndrome. Hypoxia-arousal-reoxygenation cycles observed in OSAS throughout the night increase ATP degradation and uric acid production, an end-product of purine metabolism. We aimed to find out the relationship between OSAS and serum uric acid concentration.

MATERIAL-METHOD

Subjects who underwent polysomnographic evaluation in our sleep laboratory were prospectively analysed. Demographic data, detailed history including comorbidities, smoking status and medications were recorded. Blood was drawn for tests complete blood count and biochemical analysis.

RESULTS

The study population consisted of 449 subjects with a mean age of 47.78(18-65); 283 were male (%63), 166 were female (%37). According to PSG data AHI was <5 in 43 subjects, 406 had OSAS.

Comorbidities were hypertension in 135(%30), DM in 80(%18), ischemic heart disease in 53(%12), asthma in 53(%12), dyslipidemia in 14(%3), COPD in 12(%2.7).

Serum uric acid level was increased in 75 cases; 3 in control group and 72 in OSAS group. Thirteen had mild, 25 had moderate and 34 had severe OSAS.

Mean serum uric acid level was significantly higher in OSAS compared to control group. Blood count and urea levels were similar in both groups, whereas creatinine was significant higher in apneics.

Uric acid and creatinine levels tended to increase significantly as the disease got more severe. Mean serum uric acid level was 5.29 mg/dl in women and 6.58 mg/dl in men.

Table 1: Mean values of biochemical parameters in control and apneic groups

	Control (n=43)	OSAS (n=406)	P value
Age	41,4	49,5	0,001
BMI	27,7	31,7	<0,0001
Hemoglobin (g/dl)	13,7	13,8	0,64
Hematocrit(%)	40,9	41,3	0,6
Leucocyte	7454	7788	0,3
Platelet	246666	247264	0,9
Uric acid (mg/dl)	5	6,2	<0,0001
Urea(mg/dl)	31	34	0,13
Creatinine (mg/dl)	0,77	0,84	0,02

Table 2: The mean values of biochemical markers in different OSAS severity groups

	Control N=43	Mild N=120	Moderate N=124	Severe N=162	P value
Age	41,4	47,2	51,4	49,8	<0,0001
BMI	27,7	30,7	31,7	32,3	<0,0001
Hemoglobin(g/dl)	13,7	13,7	13,6	14	0,15
Hematocrit(%)	40,9	41	40,6	42	0,12
Leucocyte	7454	7789	7577	7950	0,39
Platelets	246666	245068	238245	255786	0,19
Uric acid(mg/dl)	5	5,6	5,9	6,8	0,02
Urea(mg/dl)	31	33,8	34,6	33,3	0,47
Creatinine (mg/dl)	0,77	0,8	0,8	0,9	0,01

Table 3: Comparison between subjects with high and normal uric acid levels

	High uric acid levels N= 75	Normal uric acid levels N= 374	P value
Age	52±13	48±12	0.02
Gender Male %	77.3	60.4	0.003
AHI	35.2	28.5	0.04
ODI	31.4	24.1	0.019
Min SpO2 %	79.7	82.6	0.014
Mean SpO2 %	91.3	93.1	0.01
Time elapsed with SpO2 < %90	23.4	13.1	0.005
Hypertension %	51.4	29.4	0.001

CONCLUSION

Hyperuricemia is more common in OSAS. As the severity of the disease increases, uric acid levels increase. Uric acid can be considered as a marker of morbidity in OSAS.

