

ABSTRACT**The Difference of Submaximal Physical Exercise Effect between Morning and Evening Day of Blood Uric Acid Levels**

Hyperuricemia causes many problems in the community. It has been known that exercise can lead to increased blood uric acid levels. The hormone cortisol is also increased during exercise. This hormone can increase protein degradation in muscle, which may be a substrate for purines metabolism and end up as uric acid. This hormone also has a circadian rhythm, which is the peak level was obtained in the morning, and declined in the evening. The purpose of this study is to compare the increasing of blood uric acid levels after submaximal exercise between morning exercise and evening exercise. A total of eight subjects were treated in the form of submaximal physical exercise by pedaling ergocycle. The treatment repeated two times, in the morning and evening with a two days distance. Blood samples were taken before and after the exercise. Paired t test showed significantly increasing ($t_{count} > t_{table}$) of blood uric acid levels in the morning (from 6.188 mg/dL to 7.100 mg/dL) and in the evening (from 6.4 mg/dL to 7.538 mg/dL). Independent T-test showed there was no significant difference ($t_{count} < t_{table}$) between the increase in blood uric acid levels after submaximal exercise in the morning compared with evening. The conclusion was that submaximal physical exercise in the morning and in the evening have the same risk of increasing blood uric acid level.

Keywords : submaximal exercise, cortisol, circadian rhythm, purines metabolism, uric acid