

ABSTRACTS OF RESEARCH PAPERS

RP 15

The Effect of Gym Training and Cycling on Albuminuria among Gym Trainees and Professional Cyclists – A Study from Gampaha District

Kodagoda KIU¹, Wickramarachchi WKDSA¹, Weerathne LRND¹, Senarathne UD^{2,3}, Dayanath BKTP³

¹Sabaragamuwa University of Sri Lanka

²University of Sri Jayawardenepura, Sri Lanka,

³North Colombo Teaching Hospital, Sri Lanka

Introduction

Albuminuria is a sign of defective glomerular filtration membrane. It can be benign and reversible in physical exercise or pathological as in nephrotic syndrome and diabetic nephropathy. The prime aim of this study was to describe effects of exercise on urine albumin excretion.

Methods

A quasi experimental study was conducted using 30 gym trainees and 12 cyclists selected using proportionate stratified random sampling and total population sampling respectively from Gampaha district. Urine albumin to creatinine Ratio (ACR) was used to assess both groups before and after the standardized training sessions. Paired t-test and Mann Whitney test were used for data analysis.

Results

The pre and post-session ACR for gym trainees were 1.147 mg/mmol, 3.293 mg/mmol while that of cyclists were 1.144 mg/mmol, 1.305 mg/mmol. There was a significant difference between pre and post session ACR for both groups ($p=0.003$) with a positive correlation between the ACR difference and the intensity of exercise (gym trainees; $p=0.004$, $r=0.519$), (cyclists; $p=0.002$, $r=0.793$). Gym trainees showed a higher elevation of mean post session ACR reaching the cut-off limit (2.5 mg/mmol for males) for micro-albuminuria while mean ACR of cyclists remained normal throughout.

Conclusion

The albuminuria is directly proportional to the intensity of the exercise. More research needs to be done in order to state that the demonstration of recovery of albuminuria can be beneficial in athletes engaged in severe exercise to ensure absence of negative effect of training on glomerular function. Also, studies can be done on the possibility of employing post-exercise urinary ACR in diabetic and hypertensive patients for early detection of nephropathy.

Keywords

Exercise induced albuminuria, diabetic/hypertensive nephropathy