Medical Principles and Practice

Published online: December 20, 2014

Med Princ Pract 2015;24:399–400
DOI: 10.1159/000369556

Heart Rate Recovery and Physical Conditioning

Göknur Tekin, Abdullah Tekin

Department of Cardiology, Başkent University, Ankara, Turkey

Dear Editor,

We read with great interest the article by Sarli et al. [1] investigating the relationship between psoriasis and the heart rate recovery (HRR) index. They found that HRR_{1-5} was significantly lower in patients with psoriasis compared to healthy controls and that HRR_1 was well correlated with the duration of psoriasis ($r = 0.541$, $p < 0.001$), the psoriasis area and the severity index score ($r = 0.511$, $p < 0.001$). Although we agree with their findings and conclusions, we have some concerns in interpreting the results of the findings and the design of the studies involving HRR. The HRR at 1 min of exercise is a marker of parasympathetic activity [2]. Parasympathetic activity and HRR are influenced not only by various disease processes such as obesity, insulin resistance, diabetes, hypertension, hypercholesterolemia, depression, anxiety, heart failure, and peripheral vascular disease [3] but also by various drugs [4] and physical fitness [5]. People who are in excellent physical shape have high levels of parasympathetic tone. Among patients with suspected coronary artery disease, there is a strong dose-response relationship between HRR and physical fitness [6]. Thus, attenuated HRR in a particular disease might be due to poor physical fitness rather than the disease itself.

A standardized measurement of physical activity of a study population could be assessed using the International Physical Activity Questionnaire (IPAQ). The study population could be matched with respect to physical activity using the IPAQ. The IPAQ version that we use in our studies is the short last 7-day recall questionnaire. This version consists of seven questions assessing the frequency and duration of participation in vigorous, moderate intensity and walking activity as well as the time spent sitting during a weekday, globally in all contexts of everyday life. Scores for vigorous, moderate and walking activity are calculated in minutes per week, as is the time spent sitting. The sum of the three activity scores gives an indicator of total physical activity. After multiplying the number of hours per week of each type of activity by an average metabolic cost (metabolic equivalents of task, MET), an energy expenditure indicator can also be obtained expressed in MET-minutes per week. Detailed information about the IPAQ and the methods of scoring is available at www.ipaq.ki.se. We suggest that the studies involving HRR consist of a population matched with respect to physical activity.

References

1 Sarli B, Dogan Y, Baktir AO, et al: Heart rate recovery is impaired in patients with psoriasis. Med Princ Pract 2013;22:567–570.
2 Imai K, Sato H, Hori M, et al: Vagally mediated heart rate recovery after exercise is accelerated in athletes but blunted in patients with chronic heart failure. J Am Coll Cardiol 1994;24:1529–1535.
3 Curtis BM, O'Keefe JH Jr: Autonomic tone as a cardiovascular risk factor: the dangers of chronic fight or flight. Mayo Clin Proc 2002;77:45–54.
4 Tekin G, Tekin A, Canatar T, et al: Simvastatin improves the attenuated heart rate recovery of type 2 diabetics. Pharmacol Res 2006;54:442–446.
5 Lauer MS: Autonomic function and prognosis. Cleve Clin J Med 2009; 76(suppl 2):S18–S22.
6 Cole CR, Blackstone EH, Pashkow FJ, et al.: Heart-rate recovery immediately after exercise as a predictor of mortality. N Engl J Med 1999;341: 1351–1357.

KARGER

E-Mail karger@karger.com
www.karger.com/mpp

Abdullah Tekin, MD
Department of Cardiology
Başkent University
Yüreğir, TR–06810 Adana (Turkey)
E-Mail tekincardio@yahoo.com

Reply

Impact of Physical Fitness on Heart Rate Recovery in Patients with Psoriasis

Bahadir Sarli, Yasemin Dogan, Ahmet Oguz Baktir, Serkan Kurtul, Mahmut Akpek

Department of Cardiology, Kayseri Education and Research Hospital, Kayseri, Turkey

Dear Editor,

We would like to thank you for your interest in our study [1]. In your letter, you criticized some points regarding physical fitness and its effects on heart rate recovery in our study. You also suggested the use of the International Physical Activity Questionnaire (IPAQ) to determine the degree of physical fitness.

As shown in table 1 of our study, the demographic and clinical features, including age, gender, left ventricular ejection fraction, and body mass index, were similar in patients with psoriasis and controls. Although we did not use a questionnaire for physical fitness, metabolic equivalents of task (MET), which is a reliable indicator of physical fitness and exercise capacity, was adequate in the patients with psoriasis and was not different from controls. Hence, we think that the physical fitness of patients included in our study was sufficient for interpreting the study results.

Reference

1 Sarli B, Dogan Y, Baktir AO, et al: Heart rate recovery is impaired in patients with psoriasis. Med Princ Pract 2013;22:567–570.

Bahadir Sarli, MD
Department of Cardiology
Kayseri Education and Research Hospital
TR–38010 Kayseri (Turkey)
E-Mail drsarli @ yahoo.com