P0665 **RENAL FUNCTION ASSESSMENT IN A SMALL COHORT OF ADULT PROFESSIONAL SOCCER PLAYERS**

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Background and Aims:

Signs of acute kidney injury (AKI) are registered in 10-60% of patients with exertional rhabdomyolysis. Most professional soccer players from the time to time meet the criteria for rhabdomyolysis in high season. Link between chronic high levels of myoglobin and AKI is well known, while 25% of people who had AKI subsequently develop chronic kidney disease (CKD) and in 0,3% end-stage renal disease is diagnosed over the next 3 years. Progression of renal decline depends on incomplete recovery and the amount of AKI episodes. In all studies renal function (estimated glomerular filtration rate - eGFR) was calculated by creatinine level (SCr), while usually sportsmen have greater body muscle proportion, which makes it difficult to assess eGFR by creatinine. Cystatin C level is relatively independent of body mass index and composition therefore this parameter more accurately represents kidney function

AIM: comparison of two different GFR evaluation methods, cystatin (GFRcys) and creatinine (GFRcr) in adult professional soccer players
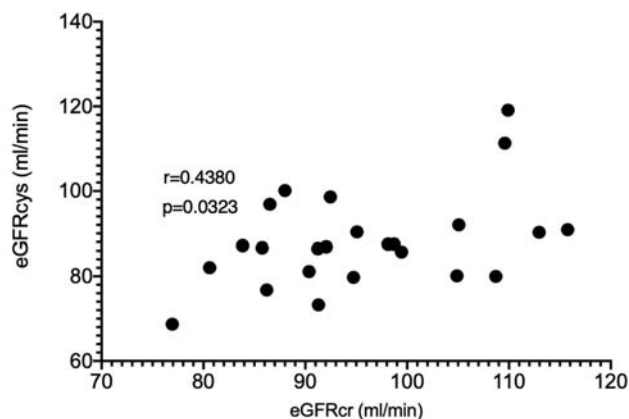
Method:

24 adult professional soccer players (age = 28 ± 3.8 years, BMI=23 ± 0.98) were included. Renal function was assessed by blood tests of serum creatinine (SCr) and serum cystatin C (SCys) performed on the next day of regular matches. Blood samples were collected fasting at 8:00 in the morning after 8-hour night sleep. eGFR levels was determined by CKD-EPI formula for SCr, and (eGFR=130xcystatin $C^{-1.069}$ x age $^{-0,117}$-7) for CysC.

Results:

Since data was distributed normally parametric tests were used. eGFRcr was significantly higher than eGFRcys : SCr 1.1 ± 0.094 mg/dl, GFRcr 96 ± 11 ml/min;CysC 0.94 ± 0.093 mg/dl, eGFRcys 88 ± 11 ml/min (p=0.0045, paired T-test). Both GFR methods and both indicators (SCr and CysC) have moderate weak statistically significant correlation. Pearson's r=0.438 (p=0.0323) for eGFR (Pic.) and 0.4047 (p=0.0498) for SCr vs Cys.

Conclusion:

In professional sportsmen cystatin C based eGFR evaluation has certain advantages in comparison to creatinine based method. Probably regular high-level physical exertions reduce kidney function.

Pic. eGFR evaluation: methods correlation plot.

Figure: