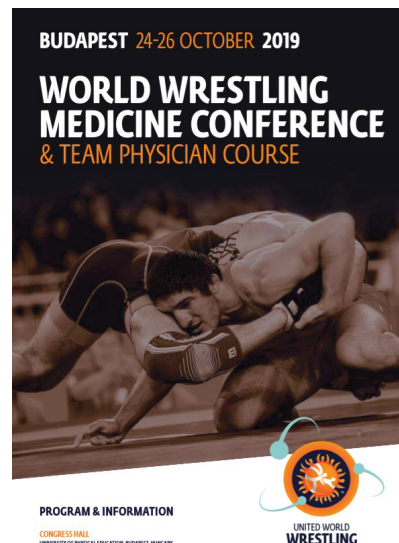




Special Section: Summaries of Presentations from the Wrestling Medicine Conference & Wrestling Team Physician Course, United World Wrestling, Budapest, October 24-26, 2019

PRECOMPETITIVE ANTICIPATORY STRESS RESPONSE OF ELITE WRESTLERS

Gábor Farkas, Éva Bretz, Tibor Barna & Károly Bretz



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ПРОДВИЖЕНИЕ НАШЕГО СПОРТА ЧЕРЕЗ ЗНАНИЕ

PROGRESO PARA NUESTRO DEPORTE MEDIANTE CONOCIMIENTO

PRECOMPETITIVE ANTICIPATORY STRESS RESPONSE OF ELITE WRESTLERS

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Testnevelési Egyetem

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Goals

We investigated the Hungarian national wrestling team's anticipatory stress response for highlighted tournament in 2018 in October at the World Wrestling Championship in Budapest. We compared the results with the baseline data's what we measured one month before the WC. At the day of the competition when the wrestlers preparing for the fight it means that the vegetative nervous system's sympathetic part is activating. This is the Canon stress. The heart rate is higher and steady the muscular strength is increase thanks for the stress. Why? Determinants of Sport Performance
Associated with the risk of Injury

Methods and hypotheses

One hour before their first match during the warming up process

Heart Rate analysis: 2 minutes rest EKG (Vicardio)

- Pulse: ↑
- Heart Rate Variability, HRV
 - RR-intervals coefficient of variation (SDNN): ↓
 - Rate of Low- and High frequency (LF/HF relation): ↑
- Special Vicardio parameters:
 - State of heart: ?
 - Stress index: ↑

Measure of muscular strength:

- Strength of Right- and Left hand grip: ? The role of losing weight, conditional trainings, stress?

Statistic: Two-sided t-test, $p = 0,05$

Participants

9 female and 22 male

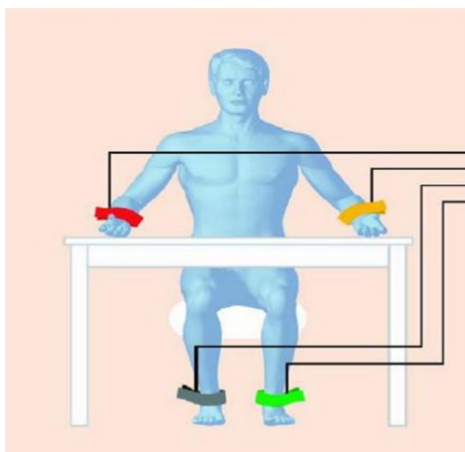
10-10-10 Hungarian National Team

The final sample:

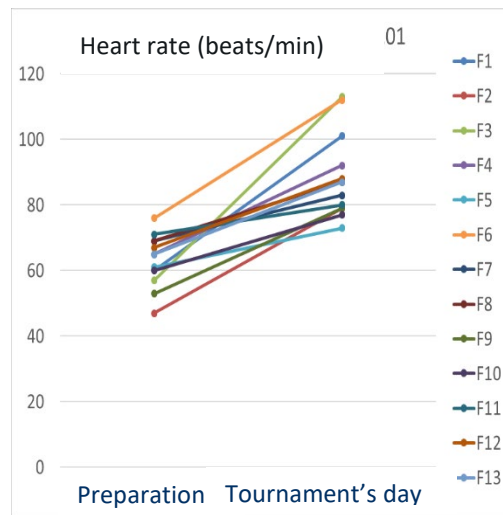
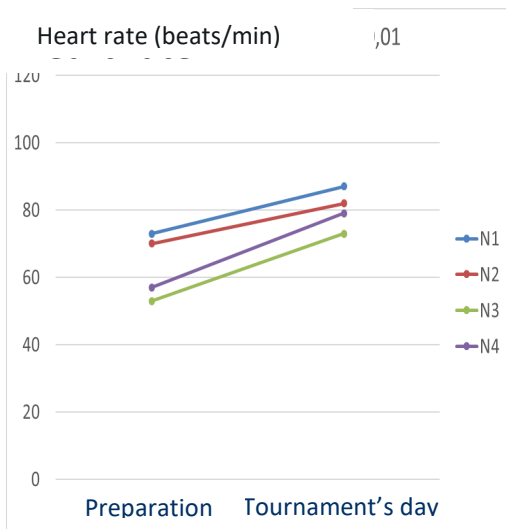
- Heart rate-examination: **4 female, 13 male**
- Muscular strength-examination: **4 female, 11 male**

The participants didn't contribute to showing their results with their name.

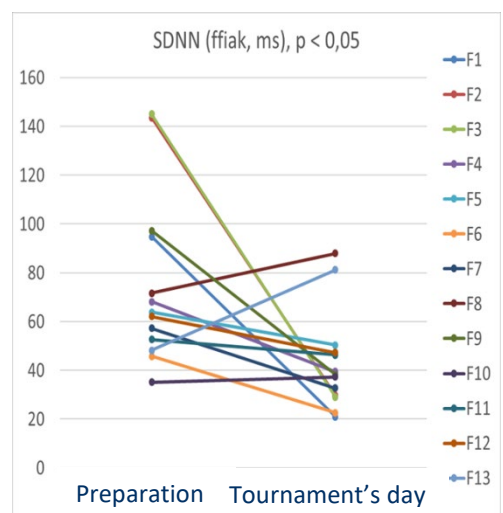
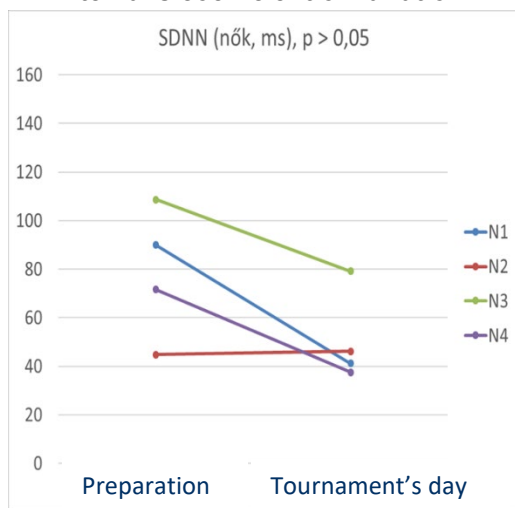
ViCardio® system was utilized



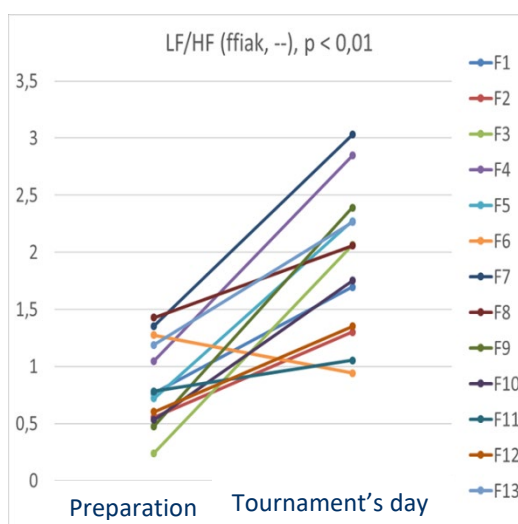
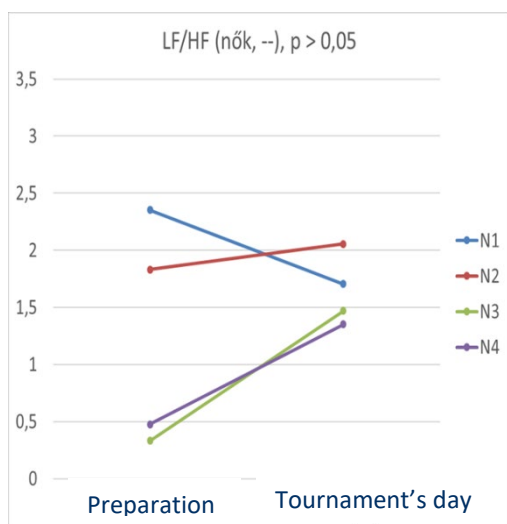
Pulse



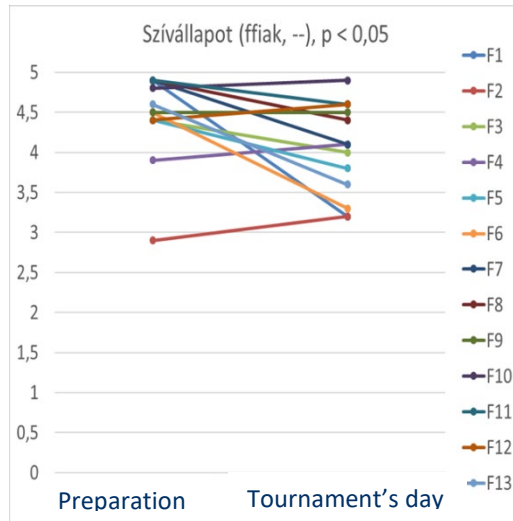
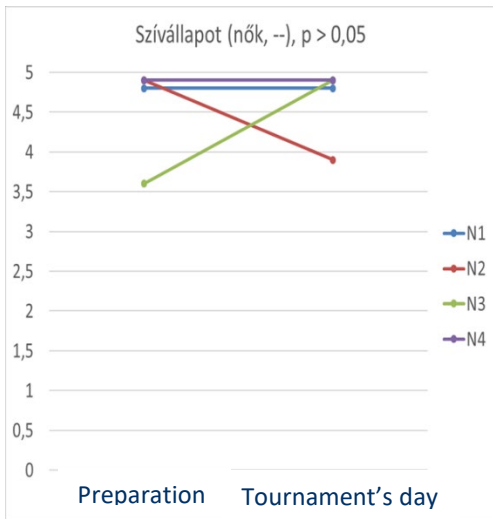
RR-interval's coefficient of variation



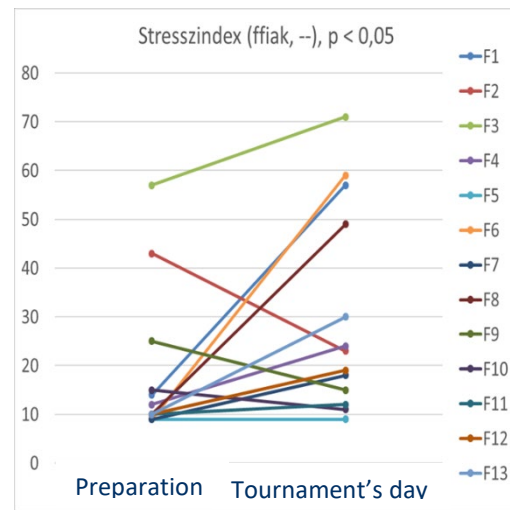
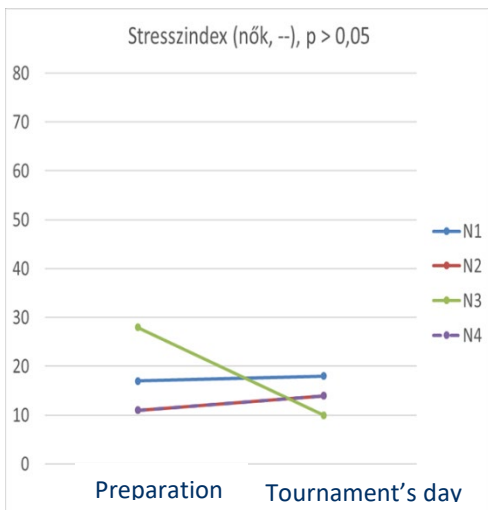
LF/HF relation



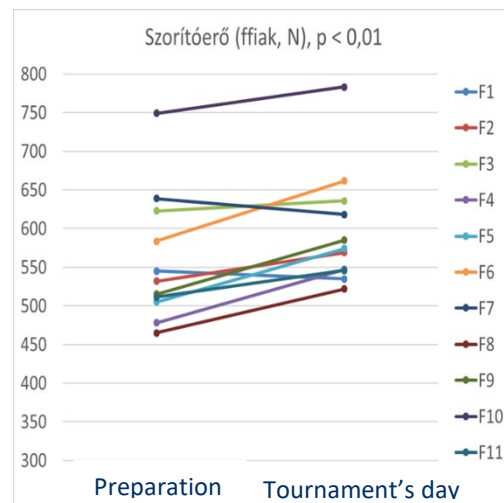
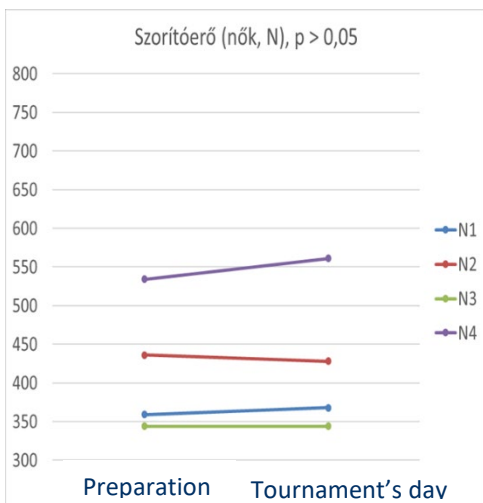
State of Heart



Stress Index



Strength (handgrip)



Discussion

- In case of female (n=4) only the pulse rate increase was significant
- The anticipatory hypotheses were validated by the results:
 - Pulse: ↑ (female: +17/min, male: +25/min)
 - SDNN: ↓
 - LF/HF relation: ↑
 - State of Heart: ↓
 - Stress index: ↑
 - Strength of hand grip: ↑ (male: +39 N)
- The special Viscardio parameters similar to the classic HRV numbers, there were well presented the acute stress reaction effect to the heart. However, the average changes corresponded with characteristics of the stress reaction, there were individual differences.
- The particular competitor's physiology parameters changes in stress, supposedly has got relevant effect to the wrestler's final result.
- Measuring of these effects is not easy, because the result is effected by several other factors, including technical knowledge, the preparedness of the opponent and the draw.
- Is there a correlation between the ASR and the results?