VITAMIN D LEVEL IN YOUNG ATHLETES

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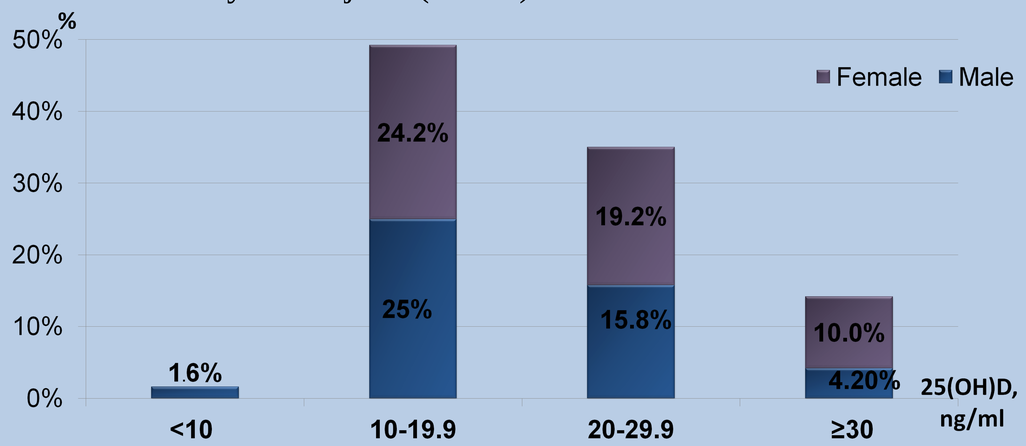
Recent studies have suggested high prevalence of vitamin D deficiency in general population. However, data from athletes are still contradictive. We examined young athletes and analyzed serum 25(OH)D level to assess potential interlinks between vitamin D status and kind of sport and body composition.

Materials & methods. A total of 120 different sport athletes aged from 15 to 25 years (mean 18.0±1.8), 64 males (53.3%), were included in the study. DEXA (Lunar Prodigy, USA) was performed in 50 subjects. Serum levels of 25(OH)D (AbbottArchitect 8000) was performed using lab kits for AbbottArchitect 8000, intra-assay CV ranged from 1.60 to 5.92% whereas the inter-assay CV ranged from 2.15 to 2.63%. Vitamin D supplement intake was an exclusion criterion.

Results

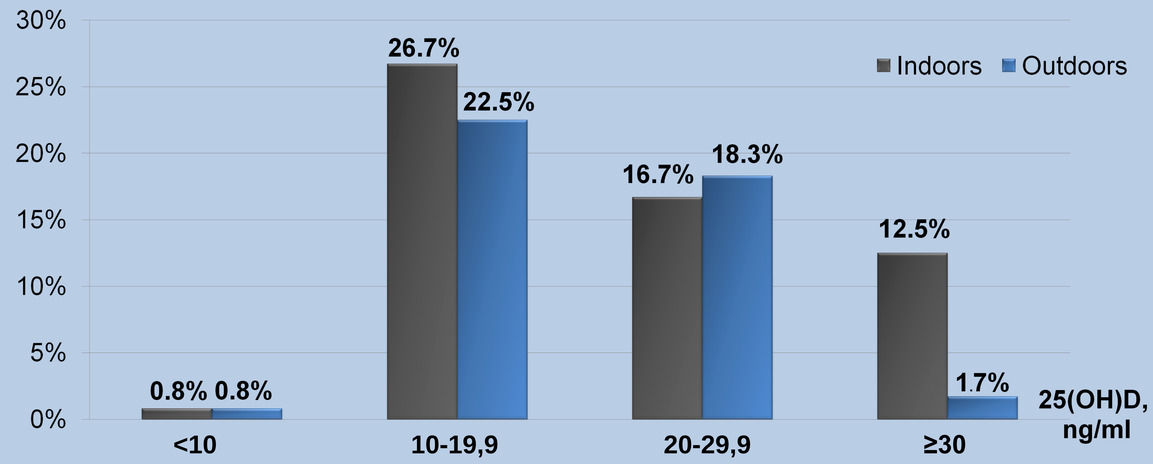
The study results showed that serum 25(OH)D level was between 9.9 and 80.2 ng/ml and was lower in males than in females. Only 17 athletes (14.2%) had normal serum 25(OH)D level (more than 30 ng/ml), 22 subjects (35.0%) were insufficient and only 61 subjects (50.8%) were deficient.



Pic. 1. Proportion of subjects with different 25(OH)D level

We found that 25(OH)D level was lower (16.8±1.1 ng/ml) in tall subjects involved is such sport as basketball, volleyball and handball than in mean height athletes (swimmers, gymnasts and racing cyclists) (21.7±1.6 ng/ml), p<0.05.

We analyzed serum 25(OH) level in outdoors (more than 2 hours training session per day) and indoors athletes and did not find difference between these groups (21.9±1.2 & 21.1±0.9 ng/ml accordingly).



Pic. 2. Proportion of indoors and outdoors athletes with different 25(OH)D level

Analysis of body composition, including BMD, total fat, lean mass showed that BMD correlated with height and was higher in team-ball players than others (p<0.05). Though we did not find an interlink between BMD, lean and fat quantity and 25(OH)D level in athletes.

Tab. 1. Body composition parameters

DEXA parameters	basketball, volleyball, handball players (n= 68)	swimmers, gymnasts, racing cyclists (n= 52)	p
BMC, g	4044.9±145.6	3816.8±146.4	<0.01
Lean, g	58991.9±2127.4	67727.6±1904.7	<0.01
Fat, g	10985.2±904.2	13331.8±1871.5	p>0.05

Conclusions

Study results showed that:

✓healthy athletes have low 25(OH)D level and high prevalence of vitamin D deficiency and insufficiency regardless of outdoor or indoor training sessions;

✓We found that body composition did not depend on vitamin D status in athletes.