

355 VITAMIN D STATUS AND MUSCLE INJURY RISK IN ELITE MALE FOOTBALL PLAYERS OVER 3 SEASONS

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Background Vitamin D has a role in skeletal muscle function and metabolism, however, its influence on muscle injury risk remains unclear.

Objective To evaluate the association between Vitamin D status and muscle injury risk.

Design Prospective cohort study.

Setting Elite male football team from Spanish LaLiga.

Participants 41 players were prospectively followed from 2016–2017 to 2018–2019.

Assessment of Risk Factors Injuries and exposure time were recorded by the team doctor following the FIFA consensus. Blood analyses were performed in 4 different season periods (July, October, January and May).

Main Outcome Measurements Serum 25-hydroxyvitamin D levels were compared between periods using Student's T-test. The association of Vitamin D with 56 muscle injuries requiring 4 or more days of absence was investigated using a Cox-frailty model. The influence of days of absence due to all injuries on between-period changes in Vitamin D was assessed using linear mixed models.

Results Vitamin D levels were highest in July (mean±SD; 48.1±9.9 ng/ml, p<0.001 vs. other periods), and lowest in January (27.3±7.9 ng/ml, p<0.001). There were no differences between October (37.3±8.3 ng/ml) and May (34.5±10.7 ng/ml, p=0.89). There was no association between continuous Vitamin D levels and muscle injuries adjusting for season period [hazard ratio=1.01, 95% confidence interval (CI)=0.97–1.05, p=0.66]. Players in the lowest period-specific quartile, i.e. with the lowest vitamin D levels, had a 2.29 times lower risk of injury (95% CI=0.97–5.41, p=0.06, 1.30 muscle injuries/1000 h) compared with players in the middle (3.24/1000 h) and highest (2.87/1000 h) quartiles combined. Days of absence were negatively associated with changes in Vitamin D levels after adjusting for season period (B=-0.06, 95% CI=-0.13–0.01, p=0.06).

Conclusions The association of Vitamin D status with muscle injuries should be further explored as studies are contradictory. Seasonal variations and being injured should be considered when supplementing with Vitamin D.

356 ABSTRACT WITHDRAWN

357 CAN IBUPROFEN PREVENT ACUTE MOUNTAIN SICKNESS IN MODERATE ALTITUDE?

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Background Anyone traveling to a high altitude is at risk of developing acute mountain sickness (AMS). The rate of AMS

among tourist population to moderate altitudes in USA was 25%, at first 12h.

Objective To understand if ibuprofen can be used to prevent AMS in athletes.

Design Healthy adult athletes from Brazilian Team received ibuprofen 600 mg, once, 6h before ascent to moderate altitude. Questionnaires were recorded 12h and 24h after ascent. Outcome measures were incidence and severity of acute mountain sickness as calculated on the Lake Louise Questionnaire (LLQ) score. Presence of AMS sickness was defined by a LLQ score of greater than 3 in the presence of a headache.

Setting Healthy adult athletes from the Brazilian Team who participated in South American Games, 2018.

Patients (or Participants) 104 adult athletes from different modalities.

Interventions (or Assessment of Risk Factors) Participants received ibuprofen 600 mg, once, 6 hours before ascent to Cochabamba, before South American Games, 2018.

Main Outcome Measurements Because of possibility of gravity of symptoms, non-steroidal anti-inflammatory drugs, acetazolamide, dexamethasone and other drugs have been studied for the prevention of AMS. However, athletes cannot use some drugs because of the effect of doping, as diuretics and corticosteroids. So, it is important to understand if NSAIDs can prevent AMS.

Results 12 hours after ascent, 17,3% of athletes had a diagnosis of AMS (94% was a mild and 6%, severe), and after 24h, 35,6% (83% was a mild and 17%, severe). Main symptom at 12h after ascent was headache and second was fatigue and/or weakness. After 24h, main symptom was fatigue and/or weakness and second was sleep disorders.

Conclusions Based on our research ibuprofen seems efficacious for the prevention of AMS in elite athletes, occurring during first 12 hours after ascent compared with health general tourist population and may therefore represent an alternative for preventing AMS.

358 SELF-MEDICATION IN FITNESS CENTERS

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Background Self-administration of medicines or dietary supplements without any physician's advice appears to be more frequently practiced by amateur athletes.

Objective The aim is to assess the prevalence of self-medication among amateur athletes who visit fitness centers and to identify the main factors influencing the self-medication. We postulate that the practice of self-medication among athletes attending fitness centers is high.

Design Cross-sectional study. Data was collected by an anonymous self-administrated questionnaire.

Setting The study was made in collaboration with 11 fitness centers in Liège (Belgium).

Patients (or Participants) Our final sample was composed of 338 amateur athletes.

Interventions (or Assessment of Risk Factors) We assessed the prevalence of self-medication based on the sex, age, BMI, socioeconomic status, health status, duration of club

membership, hours spent at the club, number of sports activities at the club, types of activities practiced at the club.

Main Outcome Measurements The main measurement is the self-medication.

Results Almost half of our 338 amateurs (49.7%) visiting fitness centers admitted to self-medicate in the context of sport practice. Among them 36.4% take dietary complements and 22.5% used drugs. The probability of self-medication increases significantly with the number of hours of sports practice, with the participation to body-building group lessons and with the consumption of sports drinks. Furthermore, 20% of the substances consumed, whether self-medicated or not, contained potentially doping substances.

Conclusions We could highlight a significant prevalence of self-medication among amateur athletes visiting fitness centers. The intensity and frequency of sports practice seems to play a key-role regarding the decision to self-medication. Given the health risks entailed by these practices it seems crucial to implement information and prevention measures regarding self-medication. Moreover, it would be interesting to lead further research assessing the adverse consequences of self-medication among this specific population.

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SERUM VITAMIN D LEVELS AND RISK OF MUSCULOSKELETAL INJURY IN UNIVERSITY TRACK AND FIELD ATHLETES

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Background While vitamin D has been shown to be an important factor in muscle, tendon, and bone health, there is limited data on the relationship of serum vitamin D levels and injury risk in otherwise healthy collegiate athletes.

Objective To determine the prevalence of inadequate serum vitamin D levels in Division I collegiate athletes and risk of musculoskeletal injury in relation to vitamin D levels.

Design Retrospective review of injury tracking database records of track and field athletes at our institution was performed to collect age, race, serum vitamin D level, and injury history.

Setting Division I collegiate athletics.

Patients (or Participants) Track and field athletes at our university who underwent serum vitamin D testing between October 2018 – February 2019.

Interventions (or Assessment of Risk Factors) Vitamin D level was measured using serum total 25-hydroxy vitamin D (25-OH vitamin D). Insufficient and deficient values were combined and labeled as ‘inadequate’ if they were measured to be less than 32 ng/mL. Information was collected for 34 athletes (13 males, 21 females).

Main Outcome Measurements Serum 25-OH vitamin D level and musculoskeletal injury history

Results Of the 34 athletes tested 14 were measured in the inadequate range (16.4 ng/mL to 29.4 ng/mL). 6 of 7 female sprinters and all male sprinters (n=2) fell in the inadequate range. Statistically significant correlation was demonstrated between race and vitamin D level with more black athletes demonstrating inadequate vitamin D levels ($p=.035$). There was no statistical correlation between athletes sustaining injuries and having inadequate serum vitamin D levels.

Conclusions Among Division I collegiate track and field athletes there was no statistical correlation between inadequate serum vitamin D levels and musculoskeletal injury risk. There was a higher rate of inadequate serum vitamin D levels among black athletes. Future studies with larger numbers of athletes may demonstrate a correlation between low serum vitamin D levels and musculoskeletal injury rate.

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KNOWLEDGE, ATTITUDE AND USAGE OF DOPING DRUGS AMONG NATIONAL LEVEL ATHLETES IN SRI LANKA

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Background Doping incidence has been increased in sports at all levels. Therefore a need for alternative approaches to address the doping concerns has arisen because doping not only threatens the health of athlete but also the true spirit of sport.

Objective To assess knowledge, attitudes and usage regarding doping among national level Sri Lankan athletes and to identify reasons for doping and to plan better doping prevention strategies were the objectives.

Design Cross sectional descriptive study in which self-administered questionnaire was used to assess knowledge and usage of doping drugs. A modified version of Performance Enhance Attitude Scale was used to assess attitudes.

Setting 20 national teams/pools of Sri Lanka for the years 2018/2019

Patients (or Participants) 347 national athletes recruited through stratified and random sampling

Results The majority of athletes (66.6%) could not define the term WADA. Not more than 38% of athletes were aware about any given drug. Though attitudes regarding doping were positive in general, 8.3% of athletes admitted they would dope if they got a chance while athletes of individual sports had negative attitudes. According to Randomized Response Technique used, 8.4% of athletes had admitted usage of doping drugs. Doping was highest among athletes in individual sports (18.2%). Lack of knowledge, lack of self confidence and pressure to win were the main reasons for doping. Younger age, less experience, professionally being only an athlete, negative attitudes and knowing fellow athletes who used doping drugs were significantly associated ($p<0.05$) with doping.

Conclusions Younger inexperienced athletes and athletes of individual sports were more prone to doping and authorities should take special care of them. Actions should be taken to fill the knowledge gaps regarding doping. Special attention should be paid to improve positive attitudes regarding doping because negative attitudes were associated with doping than poor knowledge.

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THE IMPACT OF SPORT SPECIALIZATION ON INJURY, SUCCESS, AND PERCEPTIONS OF HEALTH

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