B1-20: The Prevalence of Stress Fractures and Risk Factors Among US Army Recruits by Race and Gender

Author List:
Presenting Author: James R. Post
Additional Author:

Presenting Author: James R Post

Address: 10181 Carly Drive
Lakeland, Tennessee 38002
United States
Ph: 9018679137
Fax: 9018679137
Email: jpost5@utmem.edu
Institution: UTHSC Memphis, TN

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Abstract:
Introduction: With ongoing military operations in Afghanistan and Iraq, there is a high demand for recruits. Recruit training is rigorous and physically demanding. Studies suggest that 5-30% of recruits sustain lower extremity stress fractures leading to extended time in training or discharge from the service. Clinical experience has revealed stress fractures occur across racial and gender groups in recruits. Risk factors associated with stress fractures have been identified; however, we are still unable to predict which recruits will suffer from this insidious injury and whether risk factors differ between racial and gender groups. The purpose of this study is to (1) determine the prevalence of stress fractures by race and gender in Army recruits and (2) compare risk factors for stress fractures across racial and gender groups.

Method(s): The study design consisted of a retrospective review of medical records and training files of US Army recruits who sustained a lower extremity stress fracture while assigned to Ft Knox, KY during the period of Jun 06 - Aug 09. From the medical records, ICD-9 codes were used to identify recruits who sustained a radiological-confirmed, lower extremity stress fracture and the following data was obtained: age, height, weight, gender, race, vitamin D level, history of smoking, alcohol consumption, menarche, number of term pregnancies, most recent term pregnancy, prior fracture, and family history of bone conditions. From the training files, the raw number of recruits, by race and gender, who started training and completed recruit training during the same period was obtained. Additionally, initial aerobic fitness (time to complete 2-miles) and training outcomes (time to complete training, medical discharge) were gathered on recruits who sustained lower extremity stress fractures.
**Results:** Pending. Analysis will include prevalence determinations by race and gender along with descriptive statistics. ANOVA will be used to compare risk factors among racial and gender groups using SAS v.9.2.

**Discussion & Conclusions:** The findings of this retrospective study will be used to guide a follow-up prospective study using dual energy absorptiometry (DXA) to predict the occurrence of stress fractures in recruits.

**Abstract History:**
This abstract has not been presented or accepted for presentation in whole or in part at the SNRS or other scientific meeting.

**Financial Disclosure:**
No, I (or a member of my immediate family) have not received something of value* from or own stock (or stock options) in a commercial company or institution related directly or indirectly to the subject of my presentation.

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I will not be describing any pharmaceutical and/or medical device.

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Submitted by:
jpost5@utmem.edu