The Influence of Activity on Ankle Joint Presentation

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Objective

To report the findings of an historical activity questionnaire undertaken as part of an investigation into the influence of non-haematological factors on the development of haemophilic arthropathy.

Impact

More PWH participate in sports with a greater risk of injury to the ankle than a comparable healthy cohort and they sustain more injuries. Duration of exposure to the sport was linked to being in the ankle arthropathy group & may be more important than the nature of the sport. There may be safe levels of exposure in terms of time and levels of competitiveness. Determining the impact of exposure time may be the key to safe activity advice for PWH.

Background

It has been suggested that articular cartilage is more vulnerable to the destructive properties of blood when it is immature. However it is unclear whether exercise and activities undertaken during the period when ankle joint cartilage is vulnerable (3 – 16 years) influences the development of joint arthropathy.

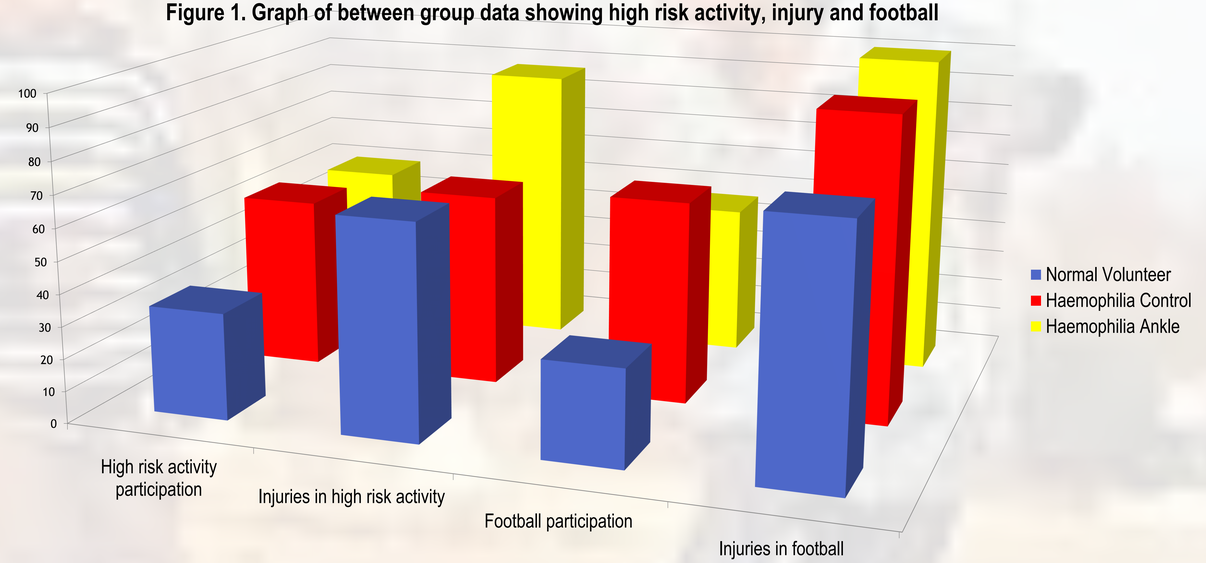
Methods

- Initial modified Delphi process, using an international, multi-professional panel identified several exercise-related factors suggested to influence arthropathy development
- Historical exercise and activity questionnaire developed
- Completed as part of a multi-centre study, using 5 centres. 3 groups: haemophilia with early ankle arthropathy, haemophilia no joint disease and normal volunteers.
- N = 30 each group. Ankle group 28 severe/2 moderate. No joint disease: severe to mild presentations
- A key activity was identified which was that with the highest risk of injury (traumatic or insidious onset) to the ankle, undertaken for the longest duration, and at the highest level of competition or intensity
- Risky sports were identified using published epidemiology and expert knowledge
- Between groups analysis carried out

Results (Figure 1)

- 57 activities/sports reported. 13 classified as high risk to the ankle joint:: football (soccer), basketball, hockey, hurling, karate, martial arts (kicking disciplines), skateboarding, rugby, tennis, triathlon, volleyball, Gaelic football and ballet.
- PWH participated in more risky sports (HA 50%, HC 53.3% & NV 33.3%, P=.028)
- Those in the ankle group sustained more injuries (HA 87.5%, HC 60.0% & NV 66.6%, P=.0005)
- Football (soccer) was the most commonly played high risk sport (HA 46.67%, HC 63.3% & NV 30%)
- PWH who were exposed to a longer duration in years to their sport were more likely to present with ankle arthropathy (P=.034)

Figure 1. Graph of between group data showing high risk activity, injury and football



Discussion

More people in the haemophilia control group played football than the ankle group but did not develop arthropathy despite also reporting a high rate of injury.

The reported football injury rate indicated that all participants in the ankle group and most of the haemophilia control group sustained injuries. It is unclear how many of these injuries were actually bleeds.

It is possible that the haemophilia control group are the "odd ones out" by not developing arthropathy in the face of sustaining injuries.

The heightened re-injury risk following sustaining a first injury is well known emphasising the importance of rehabilitation.

Moreover there are strong associations in sports epidemiology literature with respect to exposure duration and injury risk.

This indicates that the sport itself or the sport alone may not be influential in arthropathy development.

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