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Relationship between the ultrasound evaluation and the clinical examination of joints in patients with hemophilia on primary prophylaxis

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Introduction and Objectives:

People with hemophilia tend to have bleeding episodes in joints even on prophylaxis. Early detection of hemophilic arthropathy has the potential to prevent the progression of joint damage in these patients.

The **goal of this work** was to **perform a preliminary assessment** of the **relationship between** the **clinical practice** and the **ultrasound evaluation** of joints in patients with hemophilia during primary prophylactic therapy.

Methods:

An observational study of patients with hemophilia on primary prophylaxis aged 1-15 years without any history of inhibitors.
Data of factor replacement therapy, prophylaxis time, number and sites of joint bleeding events were recorded during clinical practices.
The assessment of joint health was performed by Haemophilia Joint Health Score (HJHS) and by the technique Haemophilia Arthropathy Early Detection with UltraSound (HEAD-US).
We carried out a descriptive analysis using proportions and measures of central tendency and dispersion. Spearman's rank correlation coefficient was used to test the association between two variables. The SAS software was used for the statistical analysis and P-values of less than 0.05 ($p \leq 0.05$) were considered statistically significant.

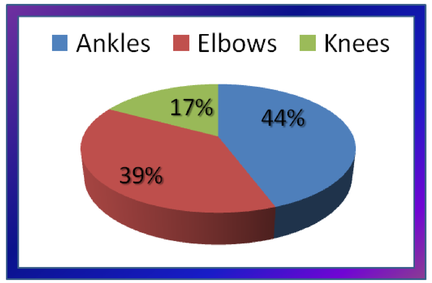
Orthopedic issues — Ultrasound

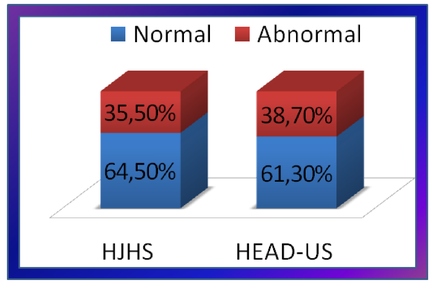
Arthropathy — Healthy joints

Results:

Thirty-one patients were examined (average age 8.94 years).
The 6.5% of patients have hemophilia type B, and 93.5% of them type A.
The average duration of primary prophylaxis was 70.4 months.
The average dose of treatment was 29.1 units/kg.

Seventy joint bleeding events were observed:.





The correlation coefficients between HJHS and HEAD-US were 0.7634 ($p<0.0001$) for elbows, 0.5101 ($p=0.0034$) for knees and 0.5742 ($p=0.0007$) for ankles.
The **30% of joints** with **HJHS=0** showed **ultrasound alterations** ($p=0.049$).

Conclusion:

The majority of the assessed patients had healthy joints.
HEAD-US detected more cases of join damage than HJHS.
The ultrasound technique would provide the possibility to predict bleeding events and have the potential to aid treatment decision-making for joint care.

References:

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