

# Frequency , risk factors and consequences of Decreased Bone mineral Density in Iranian children with Hemophilia A and B

Authors P. Eshghi<sup>1\*</sup>, B. Moradveisi<sup>2</sup>, M. Alaie<sup>3</sup>

Hospital<sup>1</sup> Prof. of Pediatric Hematology & Oncology, Mofid children Hospital, Shahid Beheshti University of medical sciences  
<sup>2</sup> Pediatric Hematology & Oncology fellow, Mofid children Hospital, Shahid Beheshti University of medical sciences  
<sup>3</sup> Associate Prof. of Pediatric Endocrinology, Mofid children Hospital, Shahid Beheshti University of medical sciences

\* peyman64@yahoo.com

## OBJECTIVES

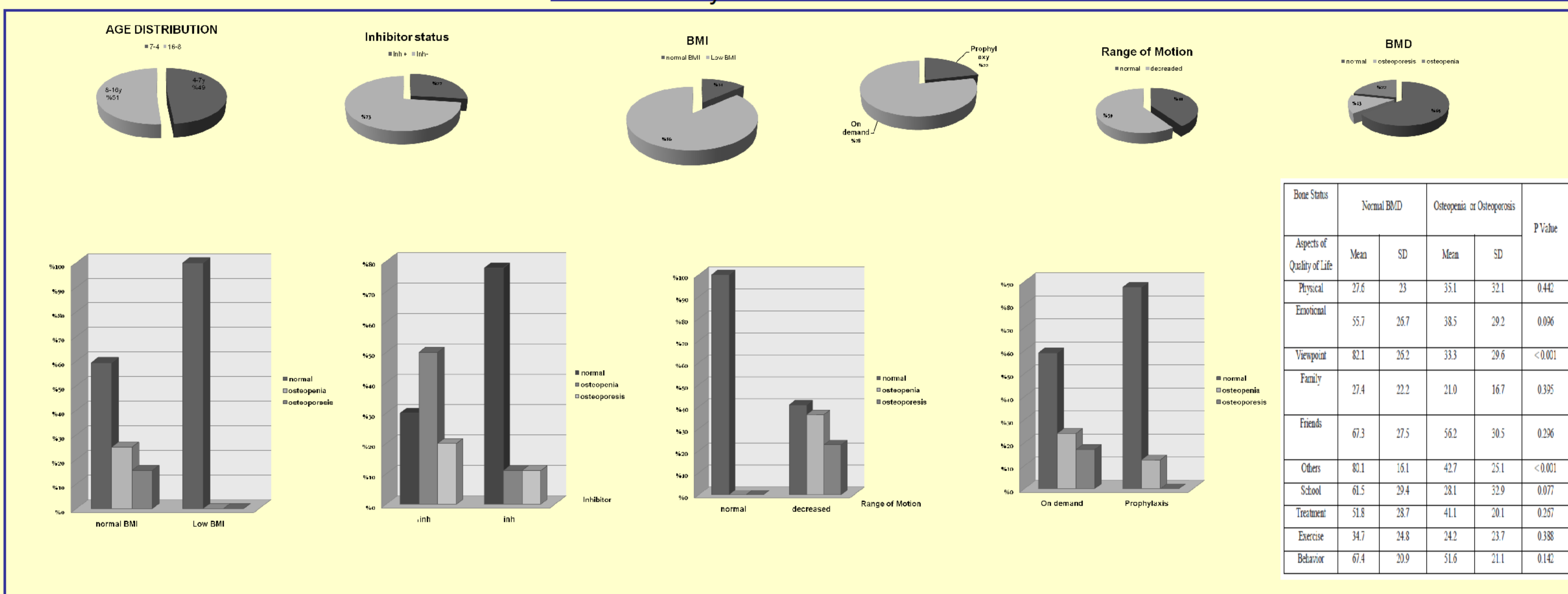
A hemophiliac patient, in his most important period of life- childhood and adolescence- whose bone density should reach to its maximum level, encounters chronic pain, loss of activity, excessive parental care and poor nutrition which gradually lead him to have a decreased bone density. This study assessed the frequency and risk factors associated with decreased bone mineral density and its impact on quality of life during childhood

## METHODS

37 children with severe hemophilia A and B treatment, referring to Mofid Children's Hospital during 2010, were selected as continuously available. For all patients joint score, body mass index (BMI), bone mineral density (BMD) -by Dual energy x ray absorptiometry-, level of inhibitor, and serological viral tests were measured. Short forms of Haemo-QoL questionnaire were used to assess their quality of life. Entered data were statistically analyzed by Kolmogorov-Smirnov Z, Mann-Whitney T-test, Fisher's Exact, and  $\chi^2$ -tests.

## RESULTS

In this study the overall prevalence of low bone density was 35%. 32 out of 37 patients (86.5%) had lower than normal BMI. Although 13 patients (40%) had low BMI patients, none of the children with normal BMI had low BMD. This difference rate was not statistically significant. **Factors that were significantly associated with the frequency and severity of decreased bone density were age, presence of inhibitor antibodies, and reduced joint range of motion.** Decreased bone density was found in 43.3% of children with demand treatment but in just 12.5% of patients who were on prophylaxis. Total quality of life score, and scores of "others" and "attitude" dimension of it were decreased significantly in patients with decreased bone density



## CONCLUSIONS

According to results of this study:

- it is suggested that appropriate BMI should be maintained by appropriate nutrition and exercise to prevent loss of bone density in patients suffering from hemophilia.
- Prophylaxis regimen should be administered in early childhood and regular monitoring of inhibitor level should be performed for early detection and management of this complication.
- Regular orthopedic visits are suggested to detect and/or prevent decrease in Range of motion and increase in joint scores.
- Decreased BMD leads to less QOL in children.

## REFERENCES:

- Iorio A., Fabbri C., Fabbricianig. *Bone Mineral Density in Haemophilia Patient. Thromb Haemophilia.* (2010) Jun 13, 103
- M. Khawaji, K. Akesson, *Long Term prophylaxis in Severe Haemophilia Seems to Preserve Bone Mineral Density. Department of Medicine, Malmö Center for Thrombosis and Haemostasis. Haemophilia* (2009), 15, 261-266
- Gerstner, Damianomi Toma. *Prevalence and Risk Factors Associated with Decrease Bone Mineral Density in Patient with Haemophilia Arizona Haemophilia.* (2009) March, 15(2):559-565.epub2009feb
- Bames C., Wong P. *Reduce Bone Density Among Children with Severe Haemophilia. Royal Children Hospital Pediatrics.* (2004) Aug., 114(2):177-181

