Impact of Hemophilia A Inhibitor on Joint Health and Health-Related Quality of Life from the Hemophilia Utilization Group Studies Part VIII in the U.S.

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Introduction

- The significant economic burden on persons with hemophilia A (PwHA) and active inhibitors is associated with:
  - High treatment costs
  - Compromised physical health
  - Compromised psychosocial health
- Few studies have compared burden of illness for PwHA with active inhibitors to those with tolerized or no inhibitors
- The study objective is to describe joint health and health-related quality of life (HRQoL) in PwHA with and without inhibitors using the Hemophilia Utilization Group Studies Part VIII (HUGS VIII) baseline cross-sectional data

Methods

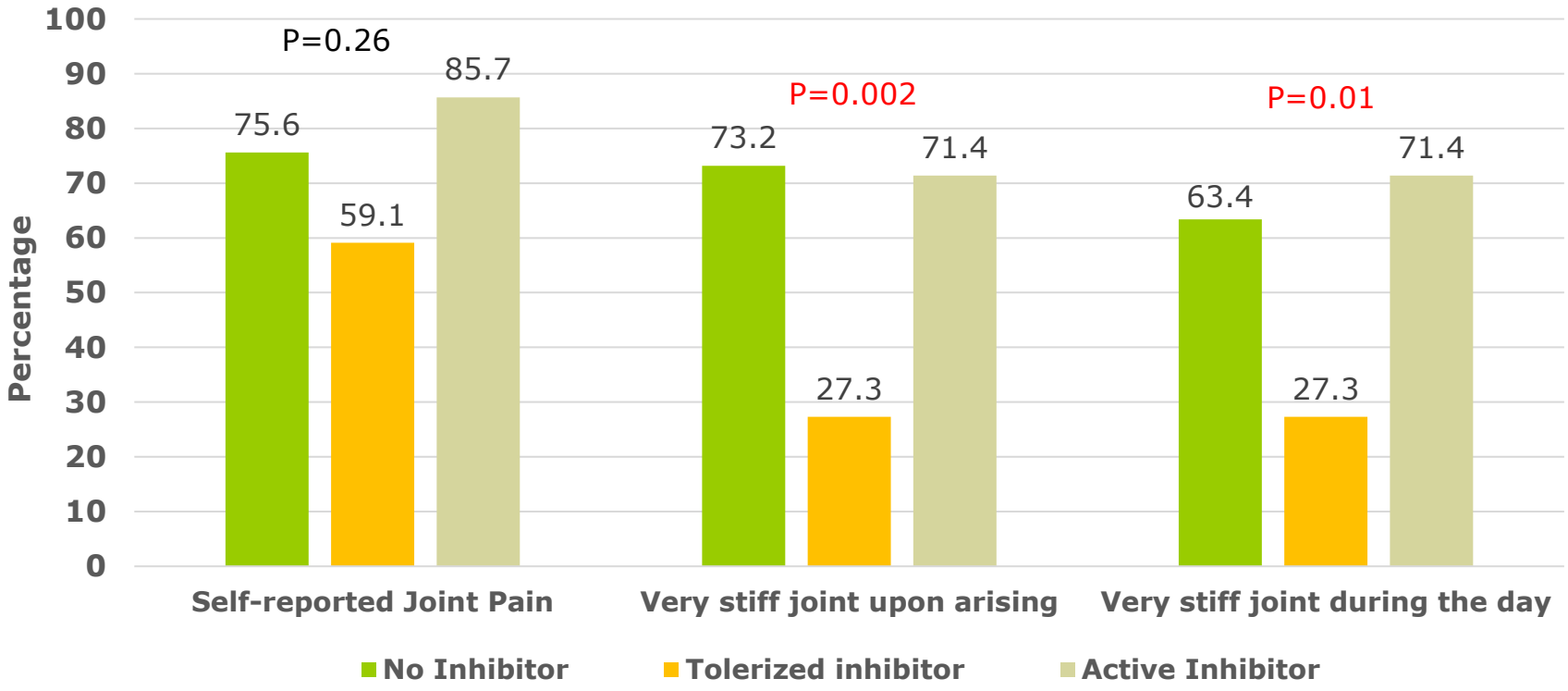
- Enrolled PwHA (FVIII activity level <5%) aged ≥ 2 years with and without inhibitors at a 1:2 ratio
- Participants were classified into three groups
  - Active inhibitors: FVIII inhibitor titer>1.0 BU prior to six months enrollment
  - Presumably tolerized inhibitors: history of Immune Tolerance Induction (ITI), and using factor VIII for prophylaxis
  - No inhibitors
- Parents/adult participants completed a standardized interview at enrollment to collect sociodemographic and clinical data, self-reported pain, joint health, and HRQoL measured by the EQ-5D-3L
- Clinical chart review documented hemophilic severity, inhibitor titer level and treatment regimen

Results: Participants Characteristics by Inhibitor Status

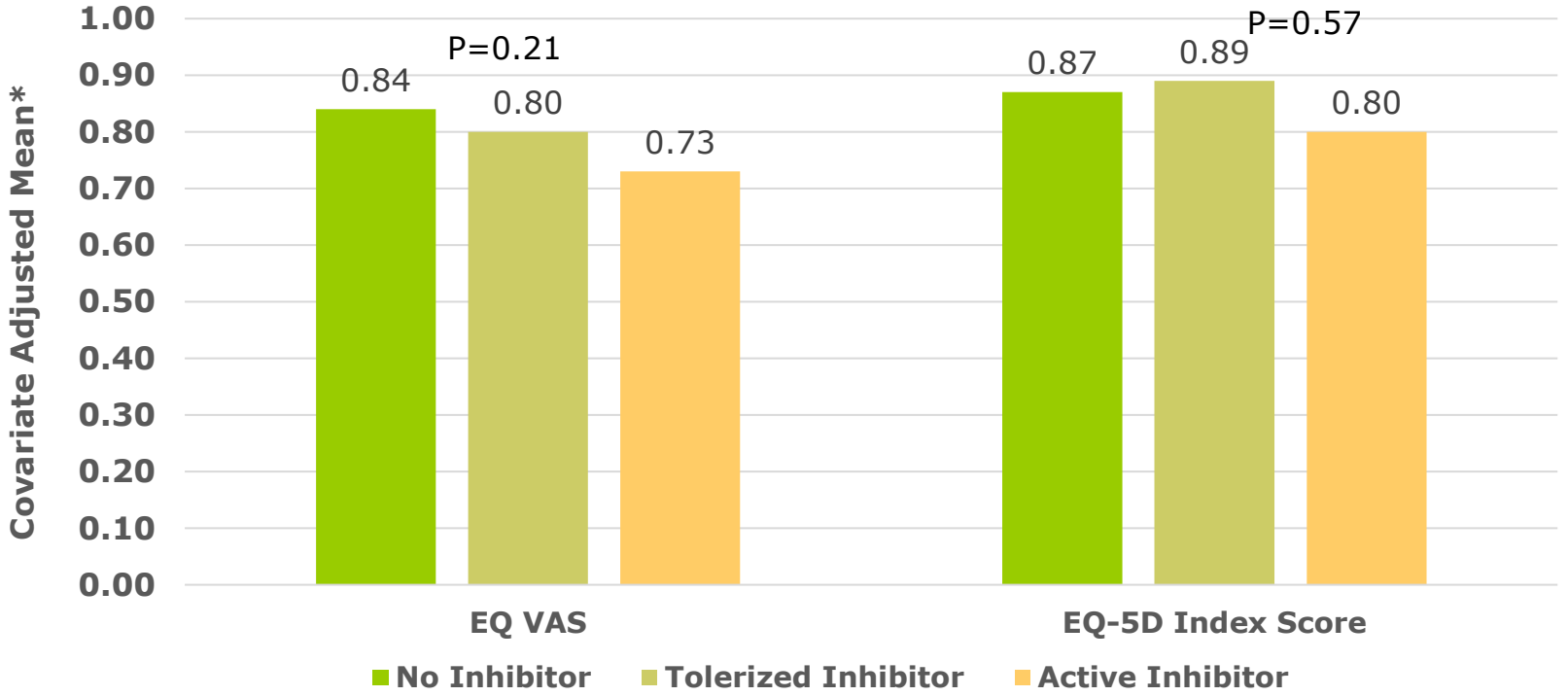
Variable	Total (N=73)	Tolerized inhibitor (n=23, 31.5%)	Active inhibitor (n=8, 11.0%)	No inhibitor (n=42, 57.5%)	P Value*
Mean (SD) age	24.8 (14.1)	17.3 (9.3)	22.6 (20.4)	29.3 (13.3)	**0.003**
Age group: Adults	48 (65.8)	10 (43.5)	5 (62.5)	33 (78.6)	**0.02**
Employment†§					**0.03**
Full-time	39 (55.7)	12 (54.5)	3 (42.9)	24 (58.5)	
Part-time	14 (20.0)	3 (13.6)	3 (42.9)	8 (19.5)	
Not Employed/Retired	17 (24.3)	7 (31.8)	1 (14.3)	9 (22.0)	
Hemophilic severity					0.12
Moderate	9 (12.3)	1 (4.3)	0 (0.0)	8 (19.0)	
Severe	64 (87.7)	22 (95.7)	8 (100.0)	34 (81.0)	
Self-reported Prophylaxis§	61 (87.1)	18 (81.8)	7 (100.0)	36 (87.8)	0.45

Note: Data are presented as number (column percentage) for categorical variables, or mean (SD) for continuous variables.
*P values were calculated from chi-square tests for categorical variables and analysis of variances for continuous variables.
§ Variables have missing data. The analyses excluded missing data. † Employment was for adult participants or parents of age<18 years. Abbreviation: SD, standard deviation.

Results: Self-reported Joint Health by Inhibitor Status



Results: Quality of Life by Inhibitor Status



EQ VAS, EuroQoL Visual Analogue Scale ranges from 0-100, has been converted to 0-1 to be presented in the figure. Higher score represents better health. EQ-5D index score ranges from 0-1, 0, 1 values corresponding to death and full health, respectively. Score difference of 0.07 was considered clinically significant in the literature. *Covariates included age, employment, and hemophilic severity.

Conclusions

- The study is limited to a small sample with a skew to younger age in persons with tolerized inhibitor
- Individuals with active inhibitors experienced greater negative impacts on full-time employment and HRQoL than PwHA without inhibitors or tolerized inhibitors
- These data suggest that younger persons with tolerized inhibitors showed better joint health (less pain, stiffness) than older persons with active inhibitors or without inhibitors
- Future research using longitudinal data on these participants will examine whether individuals in the tolerized inhibitor group with successful ITI continue with long-term prophylaxis and achieve positive joint health outcomes

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Conflict of Interest Disclosure

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