**INTRODUCTION**

- Hemophilia affects ~20,000 people in the United States (US) and over 400,000 people worldwide.1
- Most PWH experience acute pain during joint bleeds; > 50% of patients experience chronic pain due to progressive joint damage and hemophilia arthropathy.2
- Although pain management is an important part of disease care for hemophilia patients, few studies have examined pain management among hemophilia patients.3

**METHODS**

- Analyzed 2004-2012 Truven MarketScan data—a claims database encompassing over 30 million employees in the US.
- Sample included male patients aged 6-64 years with HA or HB diagnosis (ICD-9: 286.0, 286.1) who met the following criteria:— 21 inpatient or 22 outpatient hemophilia-related claims 30 days apart
- 22 pharmacy claims for clotting factors VIII or IX during the study period
- 212 months of continuous benefit enrollment from the first hemophilia treatment observed in the database
- No pharmacy claims for anti-inhibitor bypassing agent

- Included the following types of prescribed analgesics for assessment: opioids, COX-2 inhibitors, acetaminophen, and naproxen

- Treatment regimens assessed according to the World Federation of Hemophilia guidelines and through consultation with treating hematologist and pain specialists.
- Identified the prescribed analgesics using corresponding J-codes in inpatient/outpatient claims and NDCs in pharmacy claims.
- Assessed frequency of patients with pain medication (opioids and non-opioids), and annual average use separately for HA and HB patients.
- Further stratified the results by age groups: 6-18, 19-44, and 45-64 years old, performed linear trend test using generalized linear model and reported corresponding p-values in tables 2 and 3.

**RESULTS**

- Identified 457 eligible HA and 93 HB patients, contributing to 2,670 and 204-person-years respectively (Figure 1).
- Of them, 297 (56%) HA and 17 (34.7%) HB patients had any analgesic prescription during the study period, contributing to 469-person years (24.3%) of use among HA and 44-person years (21.6%) among HB patients (Table 1).
- Opioids were prescribed more often than non-opioids (HA: 19.4% vs. 80.6%, HB: 15.2% vs. 8.8%, Tables 2 and 3).
- Younger patients (45-64 age group) used more pain medication and were more frequently prescribed opioids among both HA and HB populations compared to older patients (Table 1). (Male = 14,478 Female = 10,399)
- Compared to people with chronic pain (33.9%) in the US, PWH experience chronic pain due to progressive joint damage and hemophilia arthropathy among PWH than in the general population (≥ 20 years olds, 6.9%).
- Older patients (age 45-64) used more pain medication and were more frequently prescribed pain medication (44 person-years (21.6%) among HB patients compared to people with chronic pain (33.9%) in the US).
- Patterns of prescription pain medication use among patients with hemophilia (PWH) in the United States based on a commercial insurance claims database

**CONCLUSIONS**

- Notable use of prescription analgesics, particularly among older patients
- Opioids were used more frequently, and opioid use increased with age
- High rates of opioid use among older patients suggests the need for greater pain control as the disease progresses.
- Future studies should assess the outcomes associated with frequent analgesic use, and specifically opioid use, on patients’ quality of life, and on dependency and abuse.

**References**

9. Stohler, C.S. and J. Soucie, Annual days of supply, Mean (SD)

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**Disclosure**

Anshu Shrestha and Ningqi Hou are employees of Precision Health Economics, a consulting firm that provides economic and market access analysis focused on hemophilia, sickle cell disease, and other rare diseases. Darius Lakdawalla is Chief Strategy Officer and holds equity at Precision Health Economics. Adi Eldar-Lissai is an employee and shareholder of Biogen.

**For an extended version of this paper, please see note.**