

# Impact of Acute Hepatic Porphyrias on Quality of Life and Work Loss: An Analysis of the EXPLORE Natural History Study

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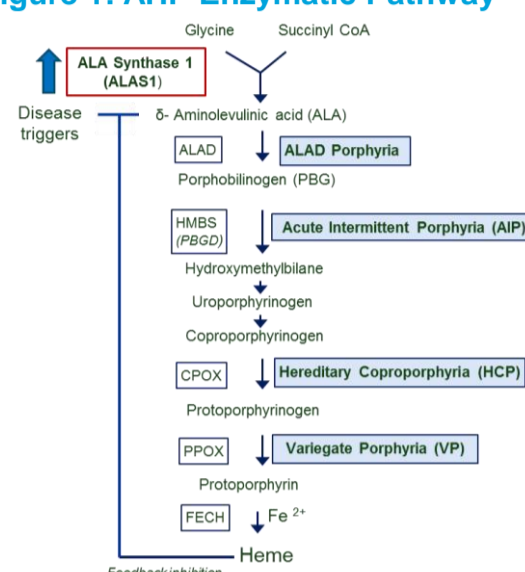
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## Background & Aims

### Acute Hepatic Porphyrias (AHPs)

- Rare, serious, life-threatening genetic disorders caused by a genetic mutation in heme biosynthesis, leads to accumulation of neurotoxic heme intermediates δ-aminolevulinic acid (ALA) and porphobilinogen (PBG)<sup>1-4</sup> [Figure 1]
  - Acute intermittent porphyria (AIP), hereditary coproporphyria (HCP), and variegate porphyria (VP); characterized by life-threatening attacks, chronic, debilitating symptoms, and the need for urgent medical care and/or hospitalization<sup>2-4</sup>
- Patients may experience substantial impact on their daily living activities and decreased quality of life (QoL)

Figure 1: AHP Enzymatic Pathway



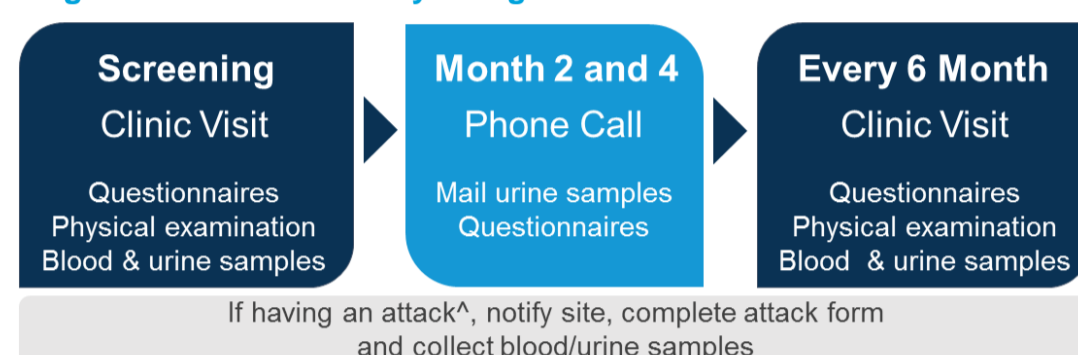
### Aim

- To describe impact on QoL and work loss among patients with AHPs with recurrent attacks from the largest international natural history study on AHPs, EXPLORE

## Methods

- EXPLORE (NCT02240784) is the first observational, multinational, prospective study designed to characterize the natural history and clinical management of symptomatic patients with AHPs [Figure 2]
- The study included male and female patients (≥18 years old) with ≥3 attacks per year or who received prophylaxis treatment (hemin or gonadotropin-releasing hormone)
- Pain scores were assessed via patient reports using an eleven point numerical rating scale (NRS) from 0-10 (0=no pain; 10=extreme pain)
- QoL was evaluated using the EuroQoL Five Dimensions Questionnaire 5-Level Scale (EQ-5D-5L). EQ-5D-5L consists of 5 domains (mobility, self-care, usual activities, pain/discomfort, anxiety/depression) and a visual analog scale for health
  - Data is presented by dichotomizing results into 'no problems' (i.e., level 1) and 'problems' (i.e. levels 2 to 5)
- Work loss for patients and caregivers was self-reported by patients at enrollment, 6 months and 12 months [Figure 2]
- Descriptive statistics were conducted to present the impact of AHPs on QoL and work loss

Figure 2: EXPLORE Study Design



\*Attacks defined as acute porphyria symptoms requiring increase in treatment (hemin, pain medications, carbohydrates) or hospitalization

## Results\*

### Patient Demographics and Disposition

- 112 patients [Table 1] were enrolled from 14 countries, including 49 (44%) from the US and 63 (56%) from 13 European countries
  - European countries included: Bulgaria, Czech Republic, England, Finland, France, Germany, Italy, Netherlands, Norway, Poland, Spain, Switzerland, Wales
- 107 (96%) and 80 (71%) patients completed 6 and 12 months of follow-up, respectively

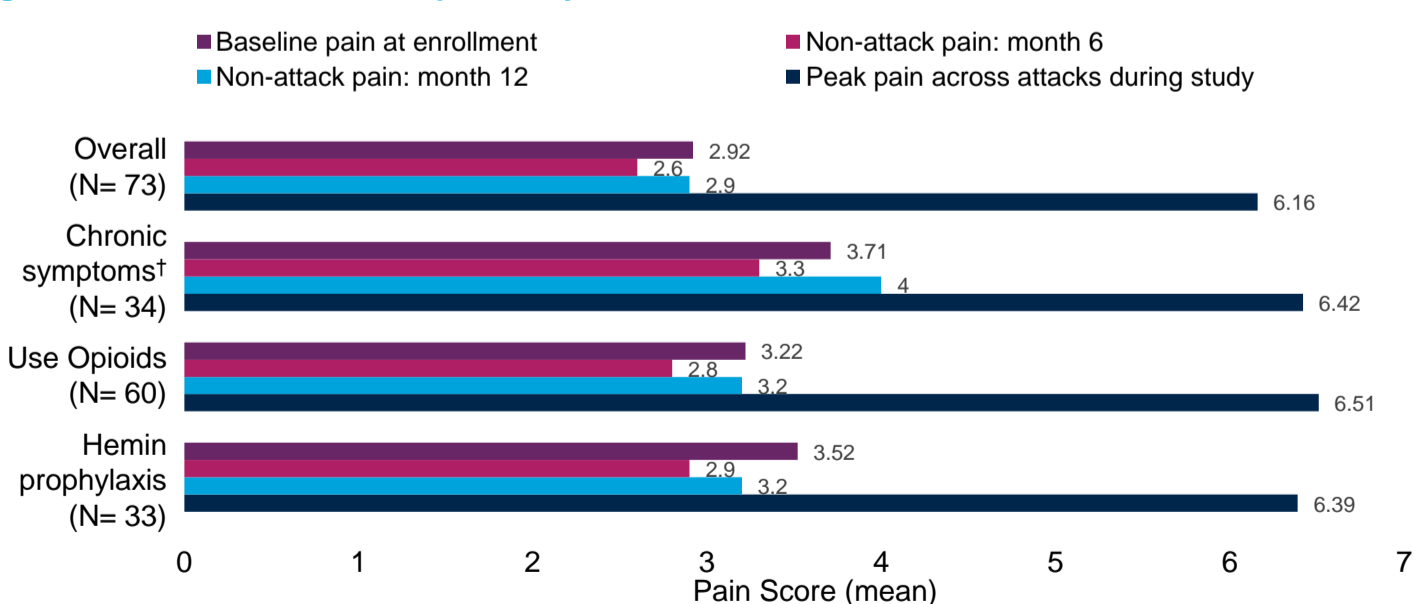
Table 1. Patient Demographics

Characteristic	N=112
Mean age, years	39.3
Female, n (%)	100 (89)
Race, n (%)	
White/Caucasian	95 (85)
Hispanic/Latino	5 (4)
Asian	3 (3)
Black/African American	3 (3)
Not Answered	11 (10)
AHPs etiology, n (%)	
AIP	104 (93)
VP	5 (4)
HCP	3 (3)
Number of attacks in past 12 months, mean	9.2

### Patient Reported Pain Experience

- Patients experienced chronic pain, as evidenced by relatively consistent pain scores even when not having an attack [Figure 3]
- During attacks, peak pain score was an average of 3.2 points higher in overall population; across all subgroups shown in Figure 3, peak pain score was 2.7-3.3 points higher during attacks compared to time of enrollment
- Reported pain scores were similar among patients with chronic symptoms, opioid use, and on hemin prophylaxis, compared to the overall population

Figure 3. Mean Pain Scores Reported by Patients



\*Subgroup based on symptoms as reported by patients at enrollment, not based on experiences throughout study

## Conclusions

- Patients with AHP, with a mean age of 39 years in this study, reported reduced quality of life in most domains of the EQ-5D-5L assessment, with pain, anxiety/depression and usual activities being the most impacted
  - Patients experienced consistent pain, even when not having attacks, which impacted their daily functioning and quality of life
  - A significant percentage of patients reported health-related problems over the course of the study
  - Patients on hemin prophylaxis did not show improved pain or quality of life profiles, suggesting that current treatment options do not sufficiently control chronic manifestations or decrease the burden of disease
- AHP patients with recurrent attacks had reduced work capacity, with 2/3 of patients reducing or stopping work due to their disease
- AHP patients with recurrent attacks had diminished quality of life and work productivity, which also impacted their caregivers; data highlight the need for effective treatments

### Patient-Reported Health Profiles

- Health profiles of patients, as demonstrated by their EQ-5D-5L responses, remained fairly consistent among patients from enrollment to 6 and 12 months [Figure 4]
- A similar percent of patients who received hemin prophylaxis reported at least some difficulty in all domains compared to patients not known to be on hemin prophylaxis at study entry [Figure 5]
  - Patients receiving hemin prophylaxis did not perceive their overall health to be any better than patients not receiving hemin prophylaxis
  - A larger percent of patients who received hemin prophylaxis reported at least some difficulty with mobility and usual activities compared to those not known to be on hemin prophylaxis: 43% vs 28% and 68% vs 47%, respectively

Figure 4. Percent of Patients Reporting At Least Some Problem†

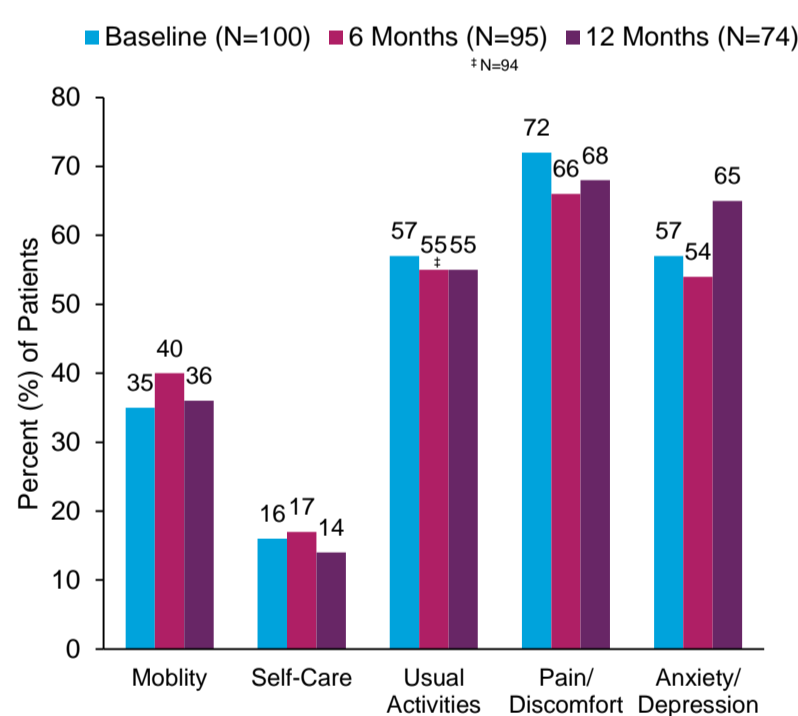
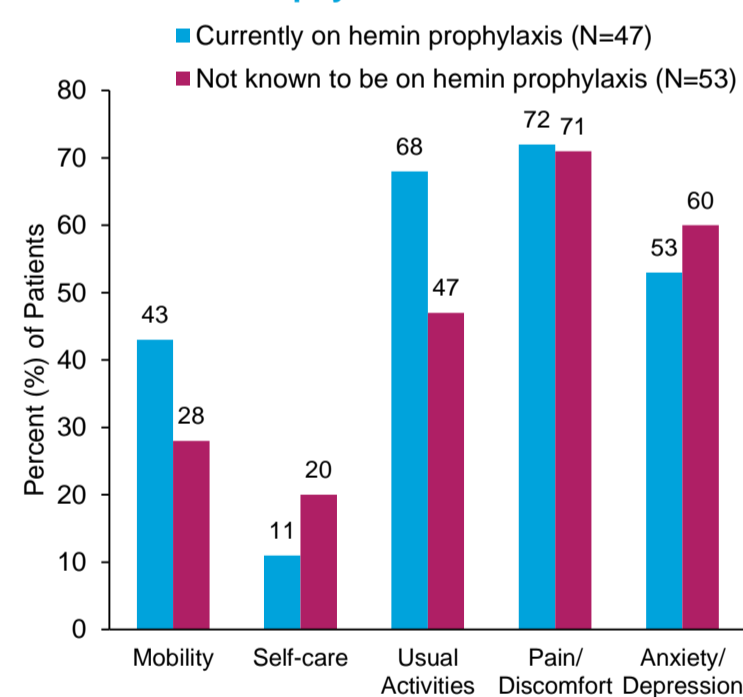


Figure 5. Percent of Patients Reporting at Least Some Problem† Based on Whether or Not They are on Hemin Prophylaxis at Time of Enrollment



†Includes patients reporting a level 2-5 (slight to extreme problem), on a scale from 1-5

### Level of Function Among Patients at Time of Enrollment

- 25% of patients reported requiring at least some level of assistance for activities of daily living

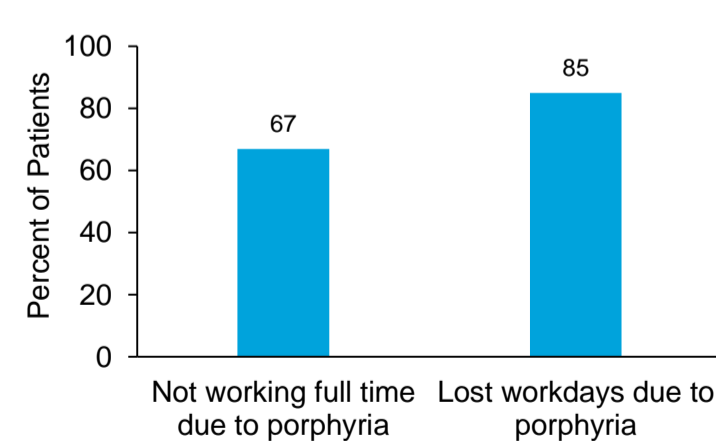
### Work Loss Among Patients at Time of Enrollment [Figure 6]

- 67% of patients who were not working full time, had reduced work time, taken leave from work, stopped looking for work, or stopped a job due to AHP (N=61)
- Of 48 patients who are employed, 85% (N=41) lost workdays due to AHP
  - An average of 54 (median: 20) workdays was lost among these patients (N=36)

### Work Loss Among Caregivers of Patients with Porphyria at Time of Enrollment

- 52% of caregivers holding a paying job lost work days due to patient's AHP (N=48)
  - Among caregivers who lost work days in past 12 months, an average of 17 days were lost (N=20)

Figure 6. Percent of Patients Reporting Work Loss due to Porphyria



## Acknowledgements & Disclosures

\*Data transfer: November 21, 2017

**Acknowledgements:** Thank you to the patients, investigators & study staff who participated in these studies; American Porphyria Foundation for their support; and John Ko and Amy Monpara for development of the poster.

**Funding:** Study sponsored by Aplyn Pharmaceuticals