

Barriers to Persisting on Prophylactic Treatment For C1-Esterase Inhibitor Deficient Hereditary Angioedema; Observations from Community Immunology

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1. BACKGROUND

Prophylactic therapies are an important tool in management of Hereditary Angioedema (HAE) though persistency on therapy may be suboptimal. To determine reasons for discontinuation, we reviewed office visit notes and EMR data generated from community care.

2. METHODS

Data source: PIONEER-HAE, a database containing EMR, continuity of care documents, and extracted visit note data, specific to patients in care of the Consortium of Independent Immunology Clinics (CIIC). Unstructured data were extracted into electronic forms by clinically-trained scribes and included attack details, on-demand treatment, symptoms onset and diagnosis, family history, comorbidities, prophylactic treatment initiation, discontinuation, and reasons for discontinuation. Patient selection: Type I or II HAE treated with FDA-approved prophylactic drugs between 2018-2022. [FIGURE 1] Drug episodes, defined as prophylactic drug-specific treatment without drug-free periods of >90 days, occurring between 2018-2022 were examined.

3. RESULTS

- Study population (n=183) [TABLE 1]: 63% (116) female, mean (median) age 44 (43) years, predominantly white (87%, 116/134), commercial insurance coverage (73%, 134), and type I HAE (90%, 164).
- Drug episodes (n=292) [FIGURE 2]: 14% (40) androgens, 2% (5) anti-fibrinolytics, 39% (114) C1-esterase inhibitors, 46% (133) kallikrein inhibitors.
- As of Dec 2022, 174 drug episodes were active and
- Discontinuation reasons recorded for 91/118 discontinued episodes [TABLE 2]
 - 26% (24/91) lack/loss of efficacy
 - 23% (21/91) comorbids or observed/anticipated adverse events
 - 23% (21/91) patient preferences
 - 16% (15/91) payer/payment issues

4. CONCLUSION

In this study of prophylactic HAE treatments, 74% of evaluable episodes were discontinued for reasons other than lack of efficacy. These data serve as an important first step towards 1) awareness of real-world factors impacting persistency and 2) optimized disease management.

FIGURE 1: Study Population Selection Criteria

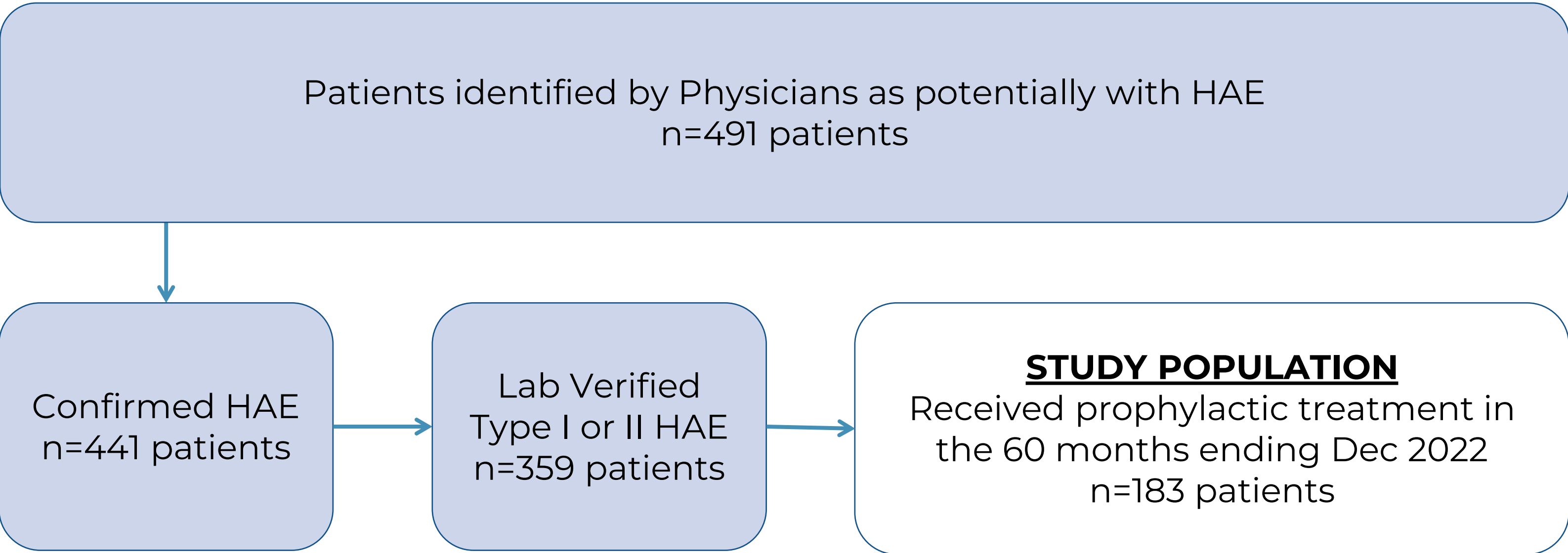


FIGURE 2: Distribution of 292 Prophylactic Episodes

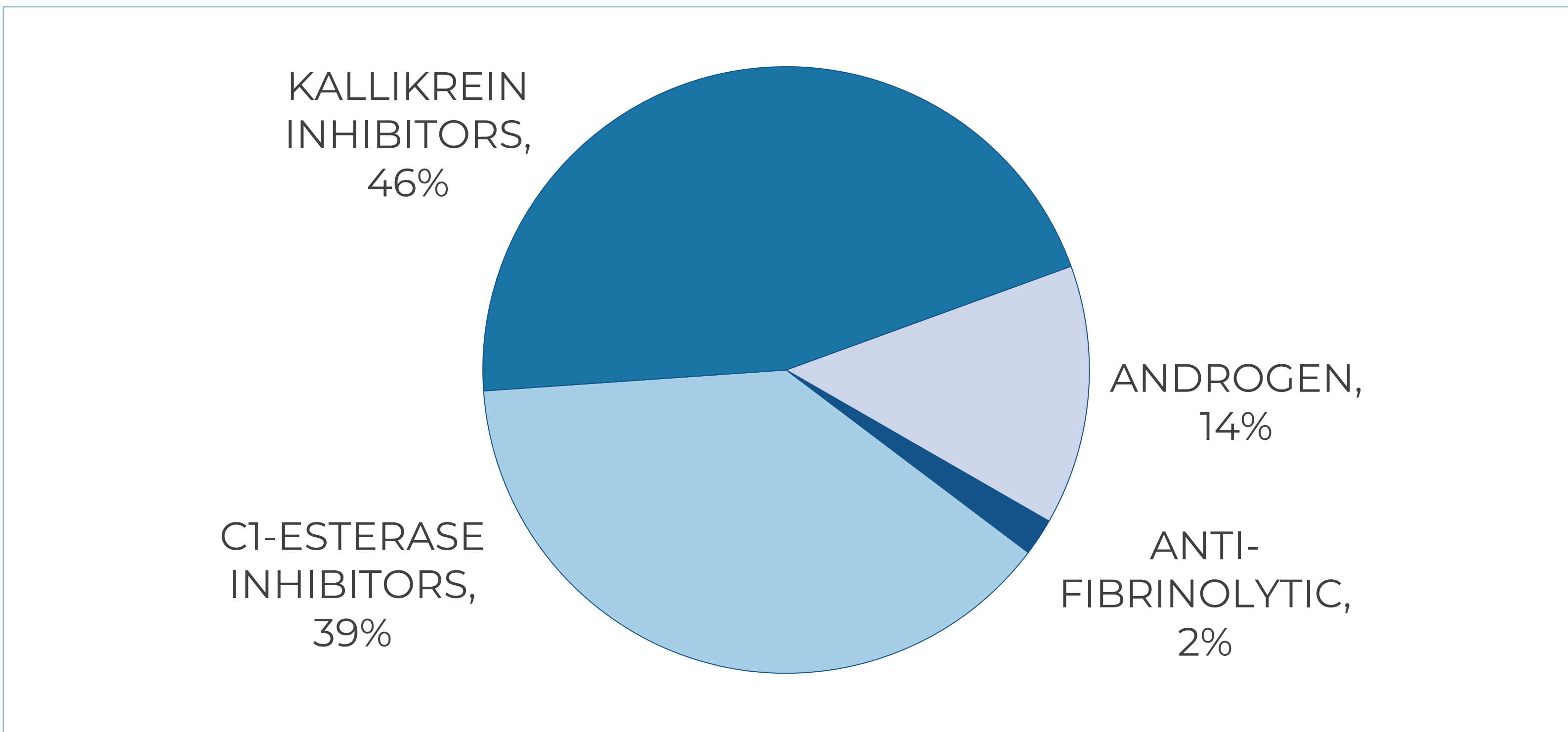


TABLE 2: Reasons for Discontinuation of Prophylactic Therapies for HAE

Reason Category	Exemplary Extracted Text	ANDROGENS			ANTI-FIBRINOLYTIC			C1-ESTERASE INHIBITORS			KALLIKREIN INHIBITORS			Total		
		No.	%	% Reason	No.	%	% Reason	No.	%	% Reason	No.	%	% Reason	No.	%	% Reason
Admin or Dosing Issues	"Not happy about volume and uncomfortable to use", "Too high of a dose for long term"	1	5%	7%	0	0%	0%	6	9%	12%	0	0%	0%	7	6%	8%
Comorbid, Observed or Anticipated Adverse Events	"rash after each dose", "experienced weight gain", "Concerned about long term liver damage", "elevated LFTs, dyslipidemia"	6	29%	40%	1	100%	100%	7	11%	14%	7	23%	27%	21	18%	23%
Disease Managed	"Symptoms stable for quite some time", "Attacks are mild and infrequent"	1	5%	7%	0	0%	0%	0	0%	0%	1	3%	4%	2	2%	2%
Lack/Loss of Efficacy	"Ineffective, more attacks", "Pt not happy, having more attacks"	1	5%	7%	0	0%	0%	15	23%	31%	8	26%	31%	24	20%	26%
Lost to Follow Up	"Patient not responding to calls from office"	0	0%	0%	0	0%	0%	0	0%	0%	1	3%	4%	1	1%	1%
Patient Requested	"interest in becoming pregnant!", "patient prefers <other drug>"	5	24%	33%	0	0%	0%	12	18%	24%	4	13%	15%	21	18%	23%
Payer/ Payment Issues	"changed insurance, not covered", "Insurance denied", " Insurance no longer covers drug", "could not afford"	1	5%	7%	0	0%	0%	9	14%	18%	5	16%	19%	15	13%	16%
Unknown	Reason vague or not documented	6	29%	--	0	0%	--	16	25%	--	5	16%	--	27	23%	--
Total	(all discontinued episodes)	21	100%	--	--	1	100%	65	100%	--	31	100%	--	118	100%	--
Total	(limited to episodes with discontinuation reason)	15	--	100%	100%	1	--	49	--	100%	26	--	100%	91	--	100%

TABLE 1: Patients Characteristics

Characteristics	No. Patients	% Patients
CENSUS		
EAST	50	27%
CENTRAL	111	61%
WEST	22	12%
FEMALE	116	63%
AGE AT LAST OBSERVATION		
0-11	1	1%
12-17	8	4%
18-35	65	36%
36-50	43	23%
51-64	39	21%
65-75	21	11%
75+	6	3%
RACE		
BLACK	13	7%
NATIVE AMERICAN	2	1%
OTHER	3	2%
UNKOWN	49	27%
WHITE	116	63%
PRIMARY PAYER		
COMMERCIAL	134	73%
MEDICAID	11	6%
MEDICARE	25	14%
SELF-PAY	8	4%
UNKNOWN	5	3%
OBSERVATION YEARS		
<=1	9	5%
>1<=2	12	7%
>2<=3	15	8%
>3<=4	8	4%
>4<=5	17	9%
>5	122	67%

Characteristics	No. Patients	% Patients
HAE TYPE		
TYPE I	164	90%
TYPE II	19	10%
AGE AT SYMPTOM ONSET		
0-11	59	32%
12-17	37	20%
18-35	23	13%
36-50	3	2%
51-64	2	1%
65-75	0	0%
75+	1	1%
UNKNOWN	58	32%
AGE AT DIAGNOSIS		
0-11	47	26%
12-17	23	13%
18-35	44	24%
36-50	14	8%
51-64	6	3%
65-75	0	0%
75+	1	1%
UNKNOWN	48	26%
FAMILY HISTORY		
MATERNAL	61	33%
PATERNAL	53	29%
FAMILY HISTORY (LINEAGE UNCLEAR)	11	6%
NO KNOWN FAMILY HISTORY	39	21%
UNKNOWN	19	10%