EHR "terms" refer to signs, diseases, and symptoms (SDS) documented, and "attributes" are descriptions of the SDS terms. Categories were developed to capture like words of the same concept. Each health care visit beginning on or after the index date of GPP diagnosis with documented notes that met at least one of the following criteria were considered a documented flare episode in the EHR.

1. For visits with a primary diagnosis of GPP (ICD-10 code L40.1):
   a. An encounter with place of service = 'EMERGENCY PATIENT', 'OBSERVATION PATIENT', 'INPATIENT', or 'URGENT'.
   b. Any term in the "Flare" category
   c. Any term in the "Pustule/Lesion" category plus any flare attribute
   d. Any term in the "Rash" category plus any flare attribute
   e. Any term in the "Other GPP symptoms" category plus any flare attribute

2. For dermatology-related visits (i.e., type of provider was a dermatologist or primary reason for visit was any dermatology-related diagnosis defined by ICD-10 L40.1 or L41.2 code):
   a. Any term in the "Flare" category AND any term in the "Pustule/Lesion" category
   b. Any term in the "Pustule/Lesion" category plus any flare attribute

Flare episodes were defined as consecutive days that a flare was documented in the EHR and were characterized by the frequency of occurrence per patient, the setting of care where they were identified, the type of specialist managing the episode, associated symptoms, and the treatments before, during, and after the episode.

RESULTS

1. Of the 48.6 million patients with EHR notes available, 1,535 patients with GPP were identified, and 271 patients had at least one flare episode documented in their EHR and accounted for a total of 513 flare episodes during the study period. (Patients’ characteristics – Table 1, Figure 1)

2. Half of GPP flares were identified in the outpatient setting (53%), followed by the inpatient setting (36%), and ER (9%) (Figure 2)

3. In the outpatient setting, most flares were treated by dermatologists (73%), followed by rheumatologists (10%) and primary care providers (9%) (Figure 2)

4. Majority of flares occurred within one month of initial GPP diagnosis. (Figure 3)

5. Over half of the flare episodes (58.3%) occurred on the same day as the index diagnosis indicating that they were likely seeking care for a new GPP diagnosis based on a flare. (Figure 3)

6. Most common treatment during a flare episode was topical steroids. (Figure 6)

7. One-quarter of all flare episodes had no documented dermatological treatment during a flare episode. (Figure 6)

8. There is significant unmet need for the treatment of GPP flares as evidenced by patients seeking treatment in inpatient and ER settings as well as the lack of advanced treatments beyond topical steroids.
   a. Over one-third of GPP flares were identified in an acute care setting.
   b. Most common treatment during a flare episode was topical steroids, and one-quarter of episodes had no documented dermatological treatment.
   c. Treatment with opioids was common during flare episodes indicating the need for pain management.

LIMITATIONS

Due to the rarity and lack of awareness of GPP, it is likely that additional patients with true GPP remain undiagnosed or are misdiagnosed with another form of psoriasis. In order to ensure that the study captured patients with GPP, only patients coded with a GPP diagnosis were included.

1. The algorithm to identify GPP flares was intentionally conservatively designed to ensure that only flares due to GPP were identified. Thus, it is likely that the methodology underestimates the number of GPP episodes.

2. Patient surveys suggest that patients do not always seek medical treatment for flares. This study only identifies patients with GPP flares documented in their EHR and underestimates the true number of patients with GPP who flare and the number of flare episodes. Also, documented flare episodes are likely to be higher severity than those not documented.

3. In the EHR data, the treatments are based on prescriptions written or administered in the office/facility. Written prescriptions may not represent whether the prescription was filled and/or actually taken by the patient.

4. Duration of flare episodes cannot be accurately determined in EHR data.

REFERENCES


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