The Impact Of a Pharmacist-Led Patient Management Program On Inflammatory Disease for Patients of Vivo Health, a Health System Based Specialty Pharmacy

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INTRODUCTION

Inflammatory Disease (ID) is defined as chronic inflammation with symptoms that include joint pain in Ankylosing Spondylitis (AS), Juvenile Idiopathic Arthritis (JIA), Psoriatic Arthritis (PsA), and Rheumatoid Arthritis (RA), abdominal pain in Inflammatory Bowel Disease (IBD), and painful, itchy skin in Psoriasis and Atopic Dermatitis (AD). Chronic fatigue and functional impairment are common in ID, depending on severity.[1]

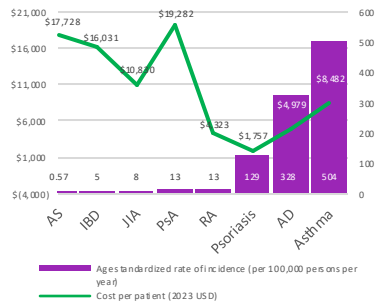


Figure 1. Incidence and economic burden of ID[2,3]

BACKGROUND

Vivo Health (Vivo) is a multi-site health system-owned outpatient pharmacy which operates five accredited specialty pharmacies, servicing a significant population of patients with inflammatory conditions. Pharmacists in the Vivo patient management program (PMP) complete telehealth assessments for every specialty patient starting on new therapy, and every six months for patients who have opted in. The PMP provides disease state education, medication counseling, monitoring, and refill screenings.

PURPOSE

This study aims to assess the effectiveness of the PMP through evaluation of patient reported outcomes collected during telehealth visits.

METHODOLOGY

This is a research in progress. The planned retrospective analysis will use data from a mixed-payer population participating in Vivo Health's PMP. A pre-post intervention analysis will be conducted to assess the impact of this pharmacist-led telehealth program. The population will be comprised of patients diagnosed with ID who had a reassessment in 2023 (n=784). Information on age, sex, months between visits, and medication was collected starting July 2021 for flares and RAPID3 and pain in August 2022. Outcomes from patients' initial assessment will be compared to the latest assessment ending 2023, the last full year of data. Primary diagnosis and outcomes will be analyzed separately.

- **Inclusion:** Diagnosis of ID with ≥3 fills of anti-inflammatory medication with completed assessment in 2023
- **Exclusion:** Patients who changed therapy, and patients with RA starting in near remission, defined as RAPID3 score of less than or equal to 3

Figure 2. Sex distribution (all)

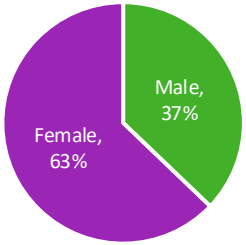


Figure 3. Primary Diagnosis (all)

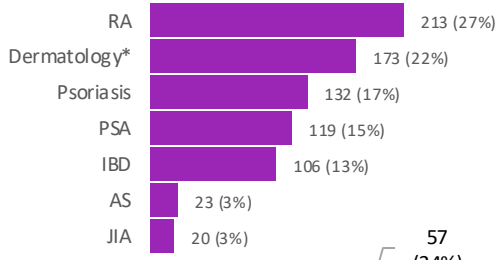
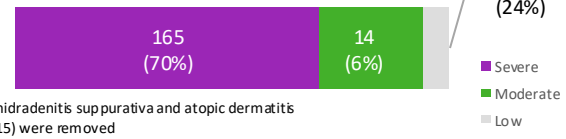


Figure 4. Initial Severity based on RAPID3 (RA) †



*Dermatology refers to hidradenitis suppurativa and atopic dermatitis
† Patients in remission (15) were removed

STATISTICAL ANALYSIS

Descriptive statistics will be summarized as means, confidence intervals, and standard deviations for continuous variables (RAPID3 scores, pain scores, age, and months between visits) and frequencies and percentages for categorical variables (RA severity, sex, flares, medication). A one-tailed T-test or nonparametric alternative will compare the initial and latest reassessment for RAPID3, severity, flares, and pain. RAPID3, flares, and pain scores will be analyzed using linear regression or a generalized linear model, with age, sex, months and RA severity as predictors. Analyses will be performed using R software, using base R and the Stats package.

PATIENT REPORTED OUTCOMES

- **RAPID3 score** (RA): [4] validated questionnaire measuring function, pain, and overall status on scale 0-30
- **Severity** (RA): Based on RAPID3 score.
  - High = >12, Moderate = 6.1-12, Low = 3.1-6, Near remission ≤3
- **Flares:** self-reported number in last 6 months (all)
- **Pain:** current, on scale of 0-10 (all)

FUTURE DIRECTIONS

- It is anticipated that the PMP will have a positive effect on outcomes
- Outcomes are predicted to vary by initial severity, sex, months in program, and age
- Limitations include:
  - Patients may opt out (i.e., self-selected)
  - Retrospective data may be inconsistently recorded
  - Medications limited to those on PMP formulary

REFERENCES

1. Chmielewski, G., et al (2023). Fatigue in Inflammatory Joint Diseases. Int J Mol Sci 24

2. Wu, D., et al. (2023). Global, regional, and national incidence of six major immune-mediated inflammatory diseases: findings from the global burden of disease study 2019. eClinicalMedicine, 64.

3. D'Angiolella, et al. (2018). Cost and Cost Effectiveness of Treatments for Psoriatic Arthritis: A Systematic Literature Review. Pharmacoeconomics, 36(5), 567-589.

4. Pincus, T., et al. (2009) RAPID3, an index to assess and monitor patients with RA without formal joint counts: similar results to DAS28 and CDAI in clinical trials and clinical care. Rheum Dis Clin North Am, 35(4), 773-778, viii.