Clinical characterization of a cohort of patients with psoriasis in a Specialty Referral Center in Chile: 2011-2017 experience using biologics

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Introduction

It is relevant to account with realistic and updated depiction of how psoriasis is being treated. The introduction of biologics in the treatment of psoriasis has changed the prognosis of disease [1], but the access is still scarce in Latin America [2]. Since the use of these drugs is relatively new, having information about *treatment pathways* in patients coming from different populations is of great interest.

Objective: To characterize demographic and clinical information from a cohort of patients that received different therapeutic strategies including various types of biologics drugs.

Materials and methods

This is a observational retrospective study from a Chilean dermatologic clinic between 2011-2017. We collected data from Electronic Health Records (EHR) regarding subtype of psoriasis, age, sex, treatment and evolution of the of the severity of disease quantified with Psoriasis Area and Severity Index (PASI), when available. Since treatment field of the Electronic Health Record was in free-text format records, we proceed to analyze the data using Natural Language Processing tools. The pipeline of the analysis was as follows:

$$Tokenize \rightarrow Normalize \rightarrow Find\,patterns$$

$$\rightarrow Replace \rightarrow Frequency\,Analysis$$

For example, to find all the ways Methotrexate was written we used `(^me.*[t].*[x])|(^m.?[tx].?[tx])` as a regular expression to search for patterns in the corpus of data.

Results

The electronic records of 550 patients were reviewed, corresponding to 1011 attentions. The mean age at the first consultation was 37.1 $\pm$ 18.4 years, and 51.6% were females. The demography of the cohort is shown in **Figure 1**.

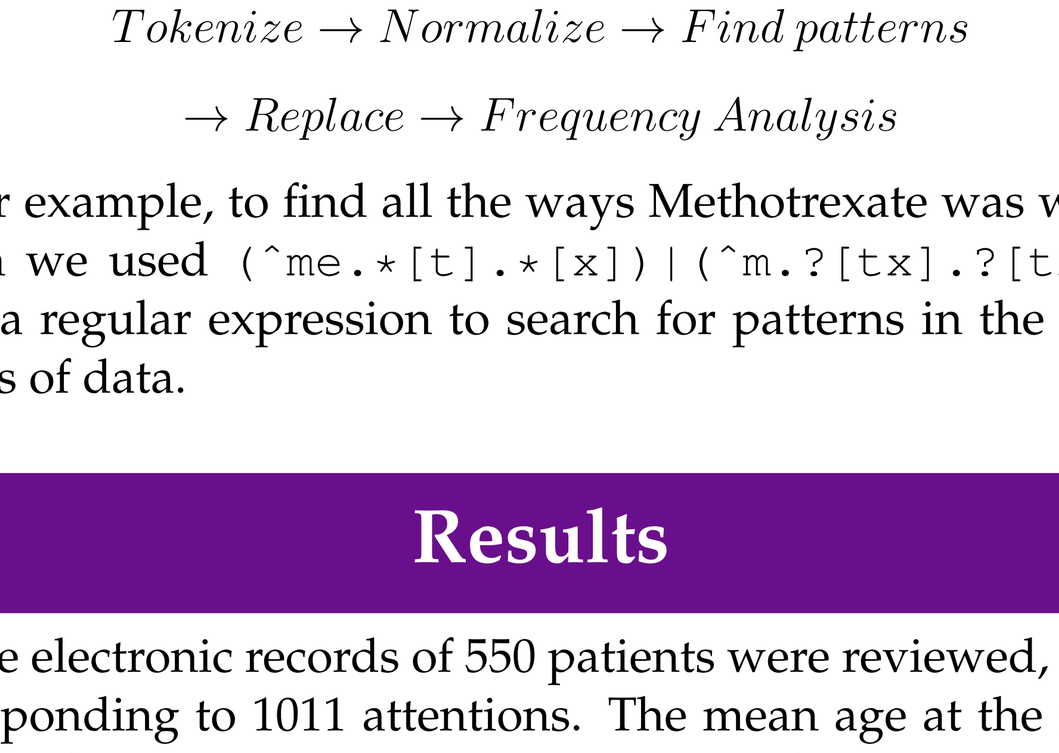

Figure 1: Demography of patients with psoriasis in a Chilean cohort from Dermacross Clinic, 2011-2017

Psoriasis vulgaris was the most frequent subtype of disease (**95.2%**). Other types of psoriasis diagnosed were coded in the EHR with the ICD-9 nomenclature (i.e., Other psoriasis, Psoriasis not specified) and therefore were not informative (data not shown). Among these records, we find mostly ungueal psoriasis and psoriasis inversa.

There were five clinical trials during the period of the study. The biologics drugs used in these trials were etanercept, tofacitinib, adalimumab, ixekizumab and secukinumab. Among the traditional treatments were methotrexate, topical steroids and vitamin D analogs. The initial mean PASI of the cohort was 23.5 $\pm$ 10.2 (range 12.3 - 62.3). A wordcloud of most frequent words found in treatment field in electronic health records are presented in **Figure 2**.

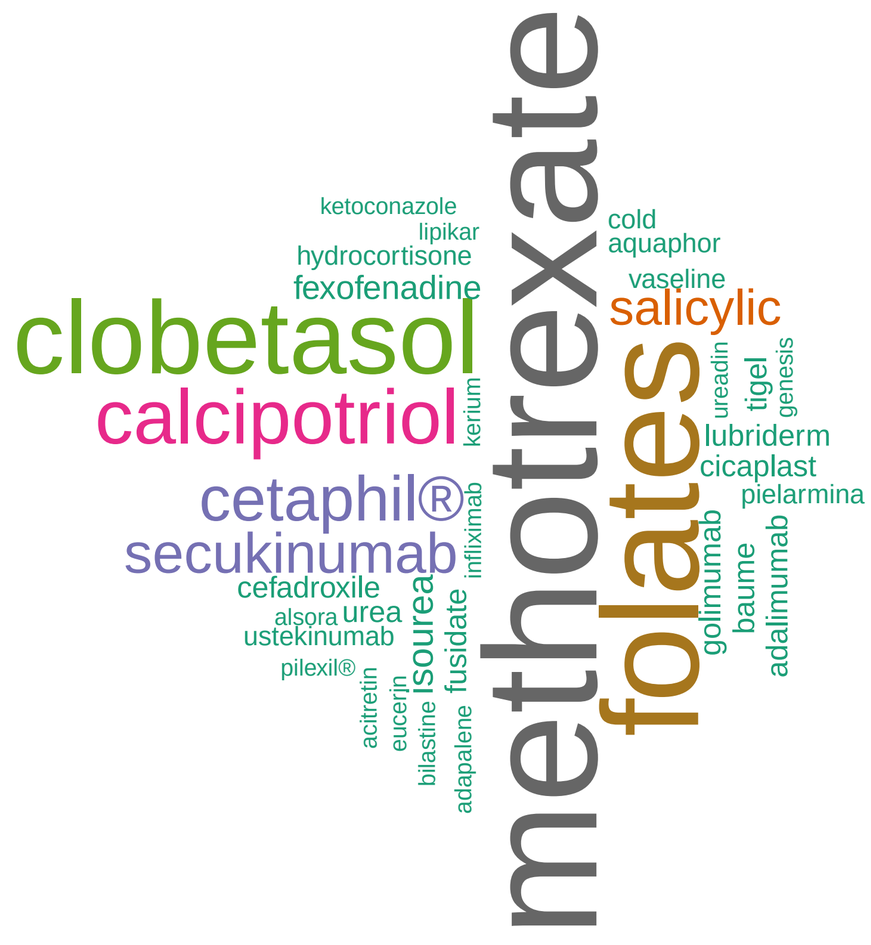

Figure 2: Most frequent treatments in a referral center of psoriasis in Chile. Dermacross Clinic, 2011-2017

Conclusion

In Chile, access to biologics could only be achieved through participation in Randomized Controlled Trials or Out of Pocket expense. This constitutes a barrier to get psoriasis patients optimally controlled, given the efficacy biologics have shown in recent years. The *treatment pathways* of this tertiary national reference center of psoriasis reflect the use of classical drugs (i.e., Methotrexate, Clobetasol and Calcipotriol as the most common drugs used), followed by secukinumab and other biologics. There is a need for levering information about psoriasis in Chile, and this work points towards filling that gap, using some text mining tools. Further work includes characterizing the difference of these treatment pathways with the public health system.

References

[1] Hee J. Kim and Mark G. Lebwohl. "Biologics and Psoriasis: The Beat Goes On". In: *Dermatologic Clinics* 37.1 (Jan. 2019), pp. 29–36. ISSN: 1558-0520. DOI: 10.1016/j.det.2018.07.004.

[2] A. Hernández-Vásquez et al. "Psoriasis in Latin America and the Caribbean: a systematic review". In: *Journal of the European Academy of Dermatology and Venereology: JEADV* 31.12 (Dec. 2017), pp. 1991–1998. ISSN: 1468-3083. DOI: 10.1111/jdv.14393.