Administrative Frequency of Vitiligo and Clinical Characteristics in a Colombian HMO: a Real-World Data Characterization For 2015-2023

EPH170

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OBJECTIVE

- To estimate the administrative frequency of vitiligo and measure its demographic and clinical characteristics in a Colombian Health Maintenance Organization (HMO) between 2015 and 2023.

METHODS

- A retrospective, descriptive and cohort study of patients with vitiligo between 2015 and 2023 was conducted. Patients with an ICD-10th code related to vitiligo (L80.X) were included in the study.

- The index date was defined as the time when the patient is diagnosed vitiligo and they were followed until death, HMO insurance discontinuation (patient loss), 5-year follow-up, or the end of the observation period (31 December 2023), whichever occurred first.

- Patient demographics, disease subtype, comorbidities, treatment and medical care were assessed at index, in addition treatment and medical care were evaluated as well during follow-up. All data were extracted from the HMO administrative health records.
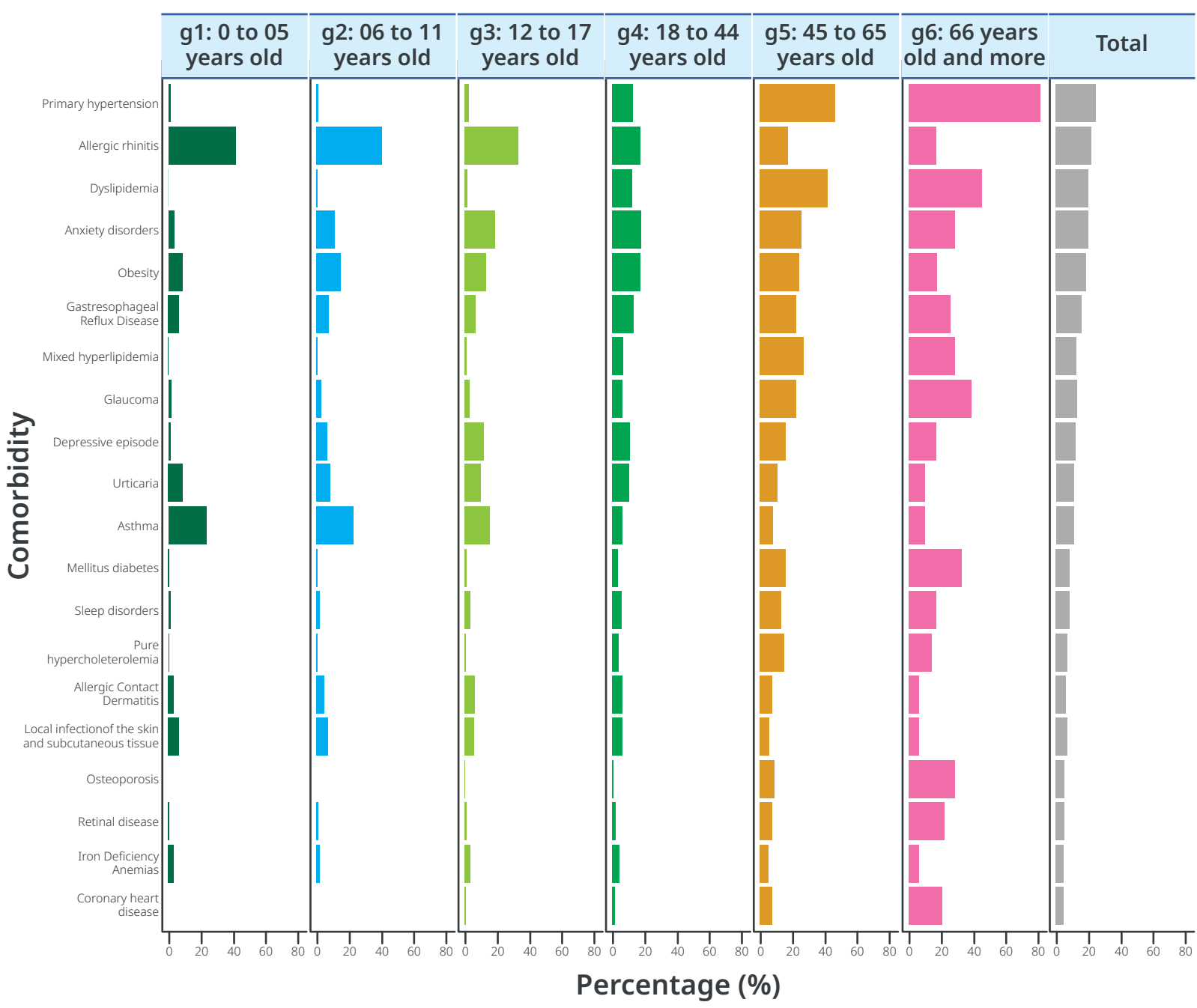
RESULTS

- A total of 21,457 patients were included in the study, most of them were adults (79.3%) – especially between 18 and 44 years old (43.8%), female (56.3%) and, about 25.9% recognized as mestizoes (mixed-race).

	Vitiligo [n = 21457]	
Age at diagnosis		
Mean	36.02	
Median	35.37	
Standard deviation	19.66	
Percentile 25	21.30	
Percentile 75	51.17	
Age group at diagnosis	**n**	**%**
0-5	992	4.62
6-11	1,825	8.51
12-17	1,618	7.54
18-44	9,406	43.84
45-65	6,017	28.04
>65 years old	1,599	7.45
Sex		
Female	12,080	56.30
Male	9,377	43.70
Race		
No data	14,071	65.58
Mestizoe	5,564	25.93
White	1,546	7.21
Afro-american	216	1.01
Mulato	43	0.20
Zambo	14	0.07
Indigenous	3	0.01

RESULTS (cont)

- Common comorbidities were primary hypertension (25.1%), allergic rhinitis (21.3%), dyslipidemia (20.4%), anxiety disorders (19.7%), and obesity (18.1%) (Figure 1).

- Comorbidities presented an increasing gradient with increasing age. However, some of them disrupted this pattern, allergic rhinitis and asthma were predominant in children and adolescents and some other were almost exclusive in adults, such as mixed hyperlipidemia and, osteoporosis (Figure 1).

- In addition, some comorbidities were present in the same proportion regardless the age, for example local infections of the skin and subcutaneous tissue was around 6% and 7% across age groups, iron deficiency anemia was around in 3% and 6%, allergic contact dermatitis oscillated between 4% and 6% and, psoriasis wavered around 1% and 4%.

- Comorbidities related to vision (such as glaucoma and retinal disease) and hearing (cf. sensorineural hearing loss), although low in the overall population (between 12% and 3%), were more common in the elderly age group (between 39% and 15%).

- By sex, few prominent differences were observed with a tendency to be mostly concentrated in females, the most notable gaps were in comorbidities such as anxiety disorders (24.6% vs 13.4% in males), Osteoporosis (7.8% vs. 1.1% in males) and, Gastroesophageal Reflux Disease (18% vs. 11.4% in males).


Figure 1. 20th most predominant comorbidities by age group

Age Groups: g1: 0 to 05 years old | g2: 06 to 11 years old | g3: 12 to 17 years old | g4: 18 to 44 years old | g5: 45 to 65 years old | g6: 66 years old and more | Total

- The administrative prevalence (AdP) of vitiligo per 100,000 persons exhibited an upward trend, starting at 498.5 in 2015. Despite being impacted by the COVID pandemic in 2020, which saw a rate of 477.4, the growth trajectory continued, peaking in 2023 at 537.0 (Figure 2).

- By age group, those aged between 6-11 and 45-65 presented the highest AdP during the entire study period, they reached in 2023 rates of 642.9 and 598.2, respectively. The elderly showed an inverse trend to the total, with a steep decline from 2016 onwards.

- The early childhood group (0-5 years old) showed the most meaningful rise after the COVID-19 pandemic, with a rate increase of 34.1% (2020: 429.1 vs. 2023: 575.4).

- A relatively gender gap in the AdP was observed, with females having the highest rates. In 2023, they presented an increased risk of 1.18-fold (579.5 vs. 489.7 in males).
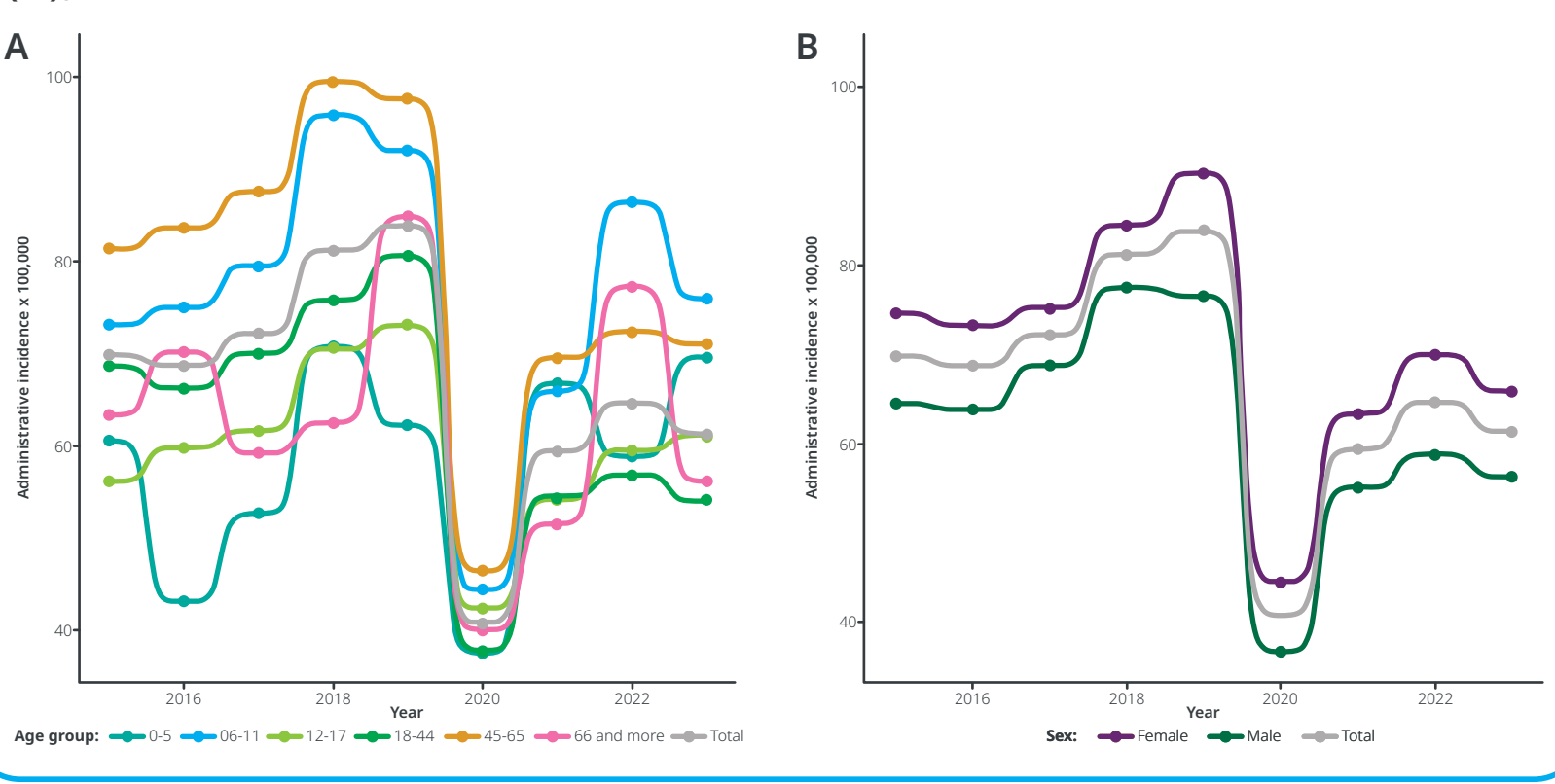
RESULTS (cont)

Figure 2. Administrative prevalence of Vitiligo by age group (A) and sex (B), 2015-2023
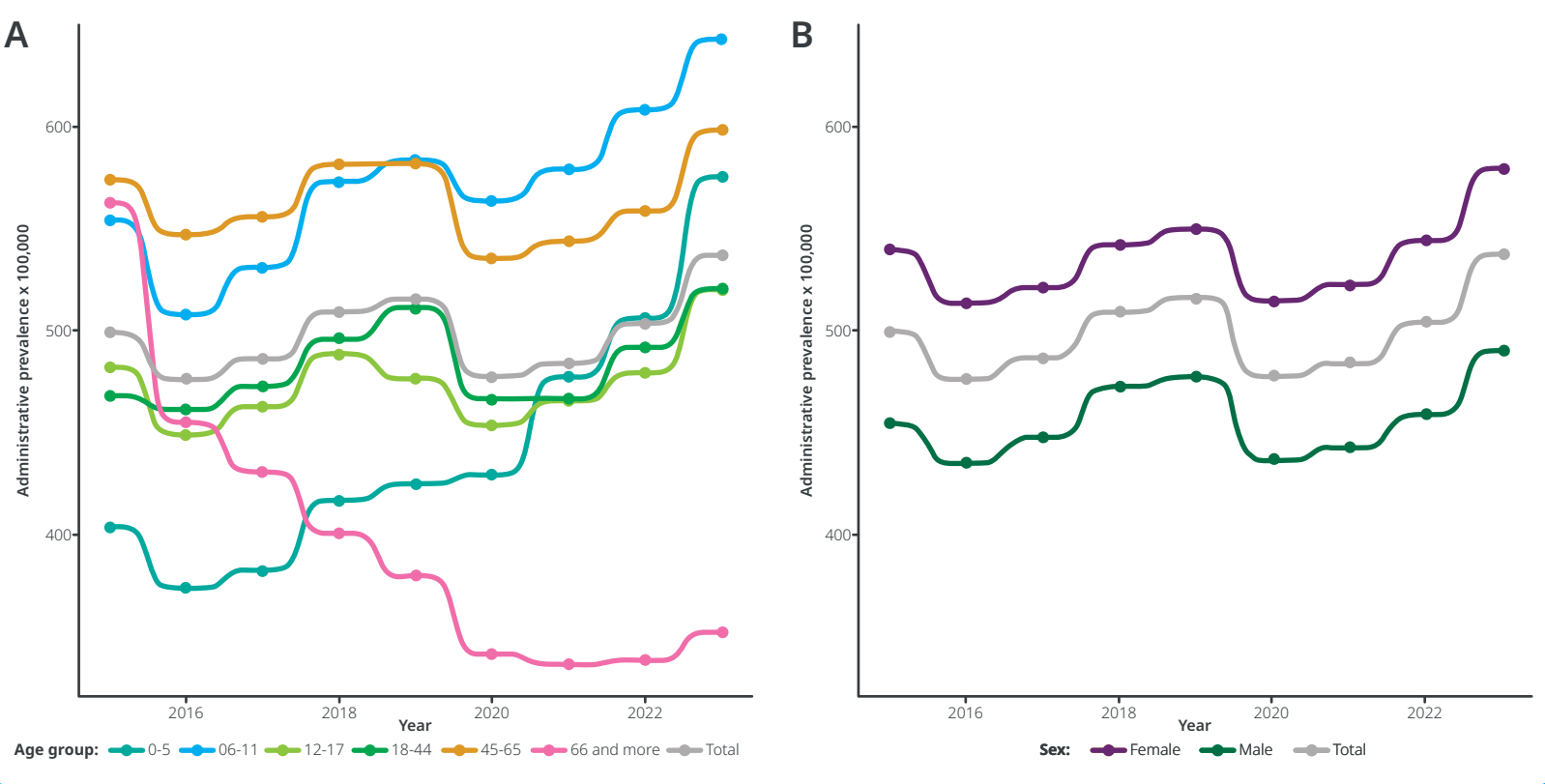
- On the other hand, the administrative incidence (AdI) per 100,000, presented a change in its upward trend level related to the COVID-19 pandemic, it started on 69.8 in 2015 and reached 83.8 in 2019. In 2020, the rate reached its lowest point at 40.8. Since 2021, the AdI has resumed its upward trend, reaching 61.3 in 2023 (Figure 3).

- By age groups, although similarities were observed with respect to the AdP -such as the downfall in 2020 and that the 06-11 and 45-66 age groups continued to have the highest rates throughout the period studied-, the AdI shows behaviors of greater variance, specifically the youngest and eldest age groups illustrate this volatility (Figure 3).

- Patterns similar to those seen in AdP by sex were observed in the AdI, where females presented a higher risk than males with a relatively stable gap among them (Figure 3).

Figure 3. Administrative incidence of Vitiligo by age group (A) and sex (B), 2015-2023

DISCUSSION

- The results of the study may be an underestimate of the rates of AdP and AdI, as they are limited to the frequency of consultation with health services in the HMO under study.

- A study in Colombia based on national health registries which included 70,702 cases have found a prevalence of 160 per 100,000[1], however this data source has been criticized by its data quality issues and therefore, some statistics derived from them may be inaccurate[2]. In addition, the authors used as a denominator population projection and not population covered by the universal healthcare system in Colombia, this can add further uncertainty on their estimates, considering the forecasting error for those projections.

- Nevertheless, some findings seems to translate, Rivera-Maldonado et al.[1] found that females presented a higher risk and that some age groups presented an increased AdP, such as children aged 10 to 14 years old and adults over 45 years old. In our study females, children aged 6-11 and adults between 45-65 presented the highest risk.

- A preliminary report on the National Registry of Patients with Vitiligo in Colombia, which included 277 patients found that in addition to the majority of patients being females, they tend to reside in urban areas and to be around 40 years of age[3]. Findings consistent with ours, considering that in our sample the patients were slightly younger (median: 35.4 years).

- As Al Hammadi et al.[4] points out, vitiligo often occurs alongside other autoimmune diseases. A study in the US have shown that type 1 diabetes was the most common comorbidity being in 4.5% of vitiligo cases[5], while a study for Latin America, Africa and the Middle East indicates that although autoimmune thyroid disease are expected for this population, low rates of it has been observed, while other conditions and such as alopecia areata psoriasis, dyslipidemia and obesity are frequently reported[4]. In our study, diseases such as psoriasis, systemic lupus erythematosus, autoimmune thyroiditis, Crohn disease was in less than 3.2% of the sample, while conditions such as diabetes, hypertension, dyslipidemia, obesity and anxiety disorders were in more than 8% of it. It may suggest that common chronic conditions have a better chance of detection in patients with vitiligo.

- Comorbid conditions related to vision and hearing loss have been described in association with vitiligo[6–8], but were rare in the overall study population and more common in the elderly. Investigating these particularities could be a focus for future research.

CONCLUSION

- The majority of patients with vitiligo were females, working-age adults and had as main comorbidity anxiety disorders.

- Comorbidities presented an increasing gradient with increasing age. Females tended to have a high proportion of comorbidities, being the widest gap in anxiety disorders, osteoporosis and gastroesophageal reflux disease.

- The AdP has been growing consistently since 2015 while the AdI growth presented a setback in 2020 but ever since has resume its upward trend.

- The AdP grew in a sharper manner for the early childhood group (0-5 years old) while it decreased progressively for the elderly group (over 65 years old).

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