# EE112- Budget impact analysis of baricitinib for treatment of alopecia areata in a Saudi hospital setting

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## Objectives

- Alopecia areata (AA) is an autoimmune condition that attacks the hair follicles, causing nonscarring hair loss and a significant negative influence on patients' psychological well-being and quality of life.
- This study aimed to assess the financial consequences associated with adopting baricitinib, an oral Janus kinase (JAK) inhibitor for the management of severe AA from the perspective of a governmental hospital in Saudi Arabia.

## Methods

- Two primary scenarios were modelled: the baseline scenario that reflects the current mix of treatment without baricitinib and the projected scenario, where baricitinib is adopted.
- The model starts with a hypothetical population of 100000 lives and applies a series of epidemiological estimates to quantify the target population eligible for baricitinib (Table 1).
- The model estimates the expected over a 5-year time horizon. All costs are reported in 2023 SR.

| | % | N |
|---|---|---|
| **Annual dermatology clinics patients** | - | 100000 |
| **Adult patients** | 77% | 77000 |
| **AA prevalence** | 2.3% | 1771 |
| **Severe AA (SALT score >50% hair)** | 12% | 212 |
| **Patients with mild-moderate AA not responding to other treatment and eligible for baricitinib** | 10% | 156 |
| **Total eligible population annually** | | 368 |

**Table 1: Estimates of treatment-eligible population**

- The treatment options available for severe AA were based on the current practice at the study site and the Saudi Expert Consensus Statement on diagnosis and management of Alopecia Areata
- The share of current (before baricitinib) and new intervention mix (after baricitinib) were derived from local expert opinion and published literature. The rate of uptake of baricitinib was based on a published estimate (Table 2).

| | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| **Intralesional corticosteroids** | | | | | | |
| Triamcinolone acetonide | 20 | 19.8 | 19.6 | 19.4 | 19.2 | 19.1 |
| **Systemic corticosteroids** | | | | | | |
| Prednisolone | 60 | 59.7 | 59.5 | 59.3 | 59.0 | 58.8 |
| Immunomodulators | | | | | | |
| Baricitinib | 0 | 0.8 | 1.4 | 2.0 | 2.6 | 3.0 |
| Tofacitinib | 0.5 | 0.4 | 0.3 | 0.2 | 0.1 | 0 |
| Methotrexate | 19 | 18.8 | 18.7 | 18.6 | 18.6 | 18.6 |
| Azathioprine | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| **Total** | 100 | 100 | 100 | 100 | 100 | 100 |

**Table 2 Baseline and projected market shares for severe AA**

***Costs data***

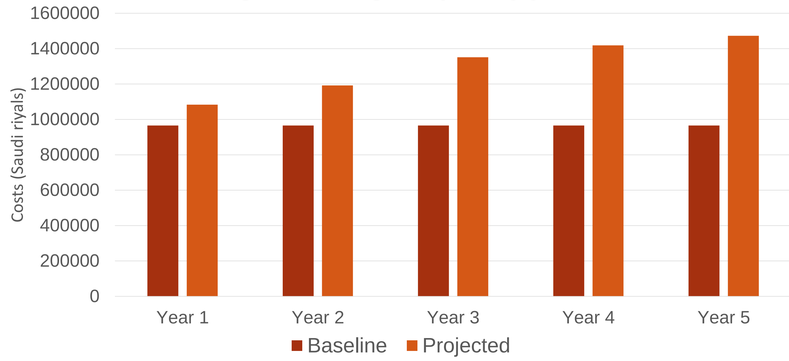
- The calculated annual treatment costs account for each drug's acquisition cost, monitoring, and administration costs. The physician fee and dispensing fees were all assumed to be zero because they are equal in all comparators.
- Baricitinib and other oral comparators were assumed to be self-administered with zero administration costs. The administration costs for intralesional corticosteroids were estimated based on a monthly dose given by a physician.
- For all comparators a 12-month treatment duration was assumed to ensure comparability of results in the base case.
- Drug prices were primarily driven from the Saudi FDA and National Unified Company for Purchasing (NUPCO) marketplace. For products with multiple generics, the lowest published price was selected.
- Monitoring requirements for each treatment were based on the Saudi Expert Consensus Statement on diagnosis and management of AA.

## Results

**Table 3 The total budget in the baseline scenario and the projected scenario (Saudi Riyals).**

| | Without Baricitinib | With Baricitinib | Difference |
|---|---|---|---|
| **Total eligible patients** | 368 | 368 | 0 |
| **Treatment costs** | 2578808.383 | 4164953 | 1586144 |
| **Monitoring costs** | 2247975 | 2353260 | 105285 |
| **Total budget impact** | 4826783 | 6518213 | 1691429 |

**Figure 1. Budget impact by year**




- The sensitivity analysis showed that budget impact results were most sensitive to AA prevalence, percentage of severe AA, and projected market shares for baricitinib across the 5-year time horizon.

## Conclusion

- For the analysis population, the use of baricitinib was associated with substantially increased costs. There is a need for studies that go beyond direct cost comparisons to include a comprehensive cost-effectiveness analysis for the Saudi setting