Cost per Responder Analysis of Biologics in Moderate-to-severe Plaque Psoriasis in Indian Healthcare Setting

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BACKGROUND

- Moderate-to-severe plaque psoriasis (PsO) affects >8 million Indians and has a detrimental effect on quality of life (QoL).
- Effective skin clearance can be one of the important factors for improving patient’s QoL. Newer biologics offer significant levels of skin clearance eventually improving QoL.
- Biologic interventions such as tumor necrosis factor inhibitors (TNFi) have revolutionized PsO treatment with more patients reaching Psoriasis Area Severity Index (PASI)-75.
- These response rates have now been superseded with achievable responses of PASI-90 and PASI-100 by newer biologics.
- It is challenging for a healthcare stakeholder (physicians, insurers, and payers) to choose more efficacious and cost-effective biologic therapies among available options in Indian healthcare setting.
- Economic evaluation involving cost per responder (CPR) for biologics and an estimation of number needed to treat (NNT) will address this unmet need and aid an efficient decision-making.

OBJECTIVES

- To estimate the annual CPR in PsO patients in India based on PASI-75/90 for 52-weeks of treatment and estimate the NNT.
- Secukinumab was compared with available originator TNFis in India; etanercept, adalimumab biosimilar and infliximab.

METHODS

- CPR has been developed to compare direct medical costs. The tool enables the user to input epidemiology numbers, level of drug usage and allows user to decide the biologic to choose to offer better health outcomes (See Figure 1).
- Annual drug costs were based on the respective ex-factory prices. The number of doses required for 52 weeks (1 year) of respective treatments were calculated as per the prescribing information (Table 1).
- Efficacy of biologic treatment in PsO was based on the percentage improvement from baseline in the PASI score.
- Efficacy for biologics under evaluation were reported from the network meta-analysis and measured as proportion of patients achieving PASI-75/90 at week-52 (Table 2).
- Response rates, baseline populations has been extrapolated from global trials.
- The CPR was calculated for PASI-75/90 responses as the ratio between 52 weeks of annual drug costs for induction & maintenance year & % of patients achieving each PASI response outcome.
- NNT to obtain 1 patient with a PASI-75/90 response was calculated.
- Cost-savings generated for PASI-75/90 outcomes were also presented.
- Additional number of responders who could potentially be treated with secukinumab were presented.

RESULTS

- The tool exhibits CPR and NNT results dynamically with user provided inputs for a specific scenario where secukinumab was compared with available TNFis.
- Bar chart in Figure 2(A) displays annual number of responders with or without secukinumab for PASI-75 and PASI-90 response.
- CPR for various biologic interventions were compared in Figure 2(B).
- Costs are presented in Indian rupees (₹).
- User was given a choice to select which TNFi can be displaced by secukinumab to offer better health outcomes as shown in Figure 2(C).

CONCLUSIONS

- This study offers a user-friendly tool for evaluation of comparative efficacy and cost-effectiveness of DCGI-approved biologic agents for the treatment of moderate-to-severe PsO, specifically in India.
- This CPR tool supports evidence-based decision-making for improved health outcomes in the Indian healthcare setting.

REFERENCES


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CONFLICTS OF INTEREST

- Dr. Pallavi Kawatra and Sameer Gokhale are employees of Novartis Healthcare Private Limited, India.

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