Actas Dermosifiliogr. 2014;105(4):401–412

ACTAS Dermo-Sifiliográficas

Full English text available at www.actasdermo.org

ORIGINAL ARTICLE

Treatment of Moderate to Severe Plaque Psoriasis With Biologics: Analysis of the Additional Cost of Temporary Dose Escalation vs Switch to Another Biologic After Failure of Maintenance Therapy☆

L. Puig

Servicio deDermatología, Hospital de la Santa Creu i Sant Pau, Barcelona, Spain

Received 15 July 2013; accepted 27 October 2013

KEYWORDS
Adalimumab;
Etanercept;
Infliximab;
Ustekinumab;
Psoriasis;
Escalation;
Switching;
Maintenance failure

Abstract
Introduction: In the event of failure of maintenance therapy with biologic agents for moderate to severe plaque psoriasis, the possible approaches are to switch to another agent or escalate the dose (generally by increased dosing frequency). Knowledge of the economic impact of the 2 alternatives would be extremely useful for therapeutic decision making.
Objective: The present analysis aimed to determine the moment in which the annualized additional cost of escalation exceeds a specified cost overrun.
Materials and methods: Based on the purchase cost (average wholesale price) of approved biologics for the treatment of moderate to severe psoriasis, the number of weeks of escalation of the initial biologic until the annualized cost of dose escalation ran €1000 over the cost of switching to another biologic was calculated for a typical patient weighing 80 kg.
Results: According to this model, switching to another biologic is always cost effective, with adalimumab followed by ustekinumab the best choices in this respect. Ustekinumab allows for a longer trial escalation period (2 to 4 injections) before the cost overrun threshold is reached, whereas the threshold is reached in a single infusion if a patient is on infliximab.
Conclusion: The study does not take into account the differential efficacy of the various biologic therapies as rescue treatment for failure of maintenance therapy given the lack of scientific evidence. The results nevertheless show substantial differences in the period during which treatment can be intensified before reaching the preset cost overrun.

☆ Please cite this article as: Puig L. Tratamiento de la psoriasis en placas moderada a grave con fármacos biológicos: análisis del sobrecoste de la intensificación temporal frente a cambio a otro biológico en caso de fracaso secundario. Actas Dermosifiliogr. 2014;105:401–412.

E-mail addresses: lpuig@santpau.cat, drlpuig@gmail.com

1578-2190/$ – see front matter

PALABRAS CLAVE
Adalimumab;
Etanercept;
Infliximab;
Ustekinumab;
Psoriasis;
Intensificación;
Cambio *(switching)*;
Fracaso secundario

Tratamiento de la psoriasis en placas moderada a grave con fármacos biológicos: análisis del sobrecoste de la intensificación temporal frente a cambio a otro biológico en caso de fracaso secundario

Resumen
Introducción: En caso de fracaso secundario del tratamiento con fármacos biológicos de la psoriasis en placas moderada a grave se puede cambiar de fármaco o intensificarlo de inicio (generalmente aumentando la frecuencia de administración). Conocer el impacto económico de ambas alternativas puede resultar de gran utilidad en la toma de decisiones terapéuticas.
Objetivo: El presente análisis pretende orientar sobre el momento en que el sobrecoste anualizado de la intensificación supera un umbral de sobrecoste predeterminado.
Material y métodos: En función de los costes de adquisición (precio de venta de laboratorio) de los agentes biológicos aprobados para el tratamiento de la psoriasis moderada a grave se ha estimado el número de semanas que podría intensificarse el biológico de inicio hasta alcanzar un sobrecoste anualizado de 1.000 € con respecto al cambio a otro biológico para un paciente tipo de 80 kg de peso.
Resultados: Según este modelo el cambio de fármaco biológico siempre es más coste efectivo, siendo adalimumab, seguido de ustekinumab, las opciones más eficientes; en caso de intensificación ustekinumab permite una mayor duración del período de prueba (entre 2 y 4 inyecciones) antes de alcanzar el umbral de sobrecoste definido, mientras que este se alcanza al cabo de una infusión en el caso de infliximab.
Conclusión: Si bien este estudio no contempla la eficacia diferencial de las diferentes terapias biológicas como tratamiento de rescate frente a fallo secundario, por existir escasa evidencia científica al respecto, los resultados muestran importantes diferencias en el periodo de tiempo durante el cual se podría intensificar el tratamiento hasta alcanzarse el umbral de sobrecoste definido.

Introduction

In the event of secondary treatment failure with a biologic agent in moderate to severe plaque psoriasis, it remains unclear whether the best strategy is to switch the patient to another treatment or to escalate the current regimen (usually by reducing the dosing interval). While not mentioned in the Summary of Product Characteristics (SPC), dose escalation, a common strategy in clinical practice, has been studied in extension trials and discussed in various guidelines[1] and consensus documents.[2]

Understanding the economic implications of the alternative strategies for dealing with secondary treatment failure may be very useful to the physician making treatment decisions. Most of the published cost-effectiveness studies do not provide information on the efficiency of dose escalation vs switching to another biologic therapy. Although not discussed in the SPC, dose escalation (an increase in the dose or a reduction in the dosing interval) has been evaluated in clinical trials and/or open-label extension studies.[3–7]

When determining which of the 2 options is more efficient, the cost of the new strategy must be taken into account as well as clinical criteria, such as the reason for modifying the regimen (gradual loss of response, or a flare, etc.), and the likelihood of response.

The cost of escalation will depend on its intensity and duration, while the cost of switching to a new biologic agent will include the higher cost of induction therapy and the expense of associated visits and diagnostic tests. In a preliminary analysis, the incremental cost of induction with various biologic agents was evaluated at 16 weeks using as a reference the average daily cost during maintenance therapy of the currently available biologic drugs and considering only the acquisition cost of the drugs (without taking into account any potential rebates or discounts).[8] The escalation strategy was associated with a cost increase factor of between 1.2 (ustekinumab, shortening the dose interval from 12 to 10 weeks) and 2 (adalimumab and etanercept), while a switch to a different biologic agent—including the cost of induction therapy—is associated with a cost increase factor ranging from 1.18 (adalimumab) to 1.75 (etanercept) at 16 weeks. This preliminary analysis did not take into account the costs associated with a switch (direct or indirect, tangible or intangible) related to the increased number of visits and laboratory tests required during the induction phase. Moreover, in some patients, the loss of response may be transient, in which case escalation could allow them to continue treatment with the first biologic agent, thereby reducing the likelihood of exhausting currently available treatment options.

For this reason, in this new analysis we have established an arbitrary threshold of €1000 as the highest acceptable incremental cost per year for temporarily escalating biologic treatment vs the alternative strategy of switching to another biologic agent. This figure corresponds to the approximate average acquisition cost of 1 month's treatment with the currently available biologic drugs during maintenance therapy at the doses specified in the SPCs, and also the cost of induction with adalimumab, the biologic agent with the lowest induction cost (2 injections of 40 mg, €1028.29). In