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Cost-effectiveness of swapping strategy for established psoriatic arthritis and immediate versus standard swapping strategy for early psoriatic arthritis

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Introduction

For patients with psoriatic arthritis (PsA) failing the first TNF-inhibitor, switching to biologic DMARDs [bDMARDs] with different mechanism of actions (swapping strategy) may be superior than switching to another anti-TNF (cycling strategy).

Objectives

To evaluate the cost-effectiveness of 1) swapping strategy for established PsA and 2) immediate versus standard swapping strategy for early PsA from the Hong Kong (HK) societal perspective

Methodology

Based on comparative effectiveness from network meta-analysis of randomized controlled trials including treatment-specific withdrawal and serious adverse event rate, a swapping York model with life time horizon was developed to evaluate swapping strategy relative to best supportive care (BSC) for PsA. The model was specified for two hypothetical subpopulations including patients with 1) established PsA (age=47, HAQ=1.22) received five swapping strategies and 2) early PsA (age=40, HAQ=0.71) received immediate (start bDMARDs after diagnosis) or standard (initially given BSC and then start bDMARDs when HAQ increase to 1.22) use of the most cost-effective swapping strategy. Both subpopulations were further classified according to the level of concomitant psoriasis [mild to moderate psoriasis (MMP, PASI=0.73) or moderate to severe psoriasis (MSP, PASI=12.5)]. All five swapping strategies started with an anti-TNF (infliximab, adalimumab, etanercept, certolizumab or golimumab), followed by secukinuamb 300mg and then ustekinumab 45mg. The cost-effectiveness was determined using a willingness-to-pay (WTP) threshold of 32,356/ quality-adjusted life-year (QALY) (HK Gross Domestic Product per capita).

Result

Five swapping strategies are cost-effective versus BSC strategy for established PsA, which are associated with greater QALY gain and lower treatment related direct costs,

psoriasis cost and productivity loss. Etanercept swapping strategy (ICER 9518.93 and 9,084.58 per QALY gain) is likely to be the most cost-effective one across the two subgroups of established PsA. For early PsA with MMP or MSP, the base case results indicated that standard etanercept swapping strategy was cost-saving (-50635.74 and -67843.32) and more effective (1.20 and 1.32 QALYs); while immediate etanercept swapping strategy was costlier (13294.95 and 8986.16), more effective (3.82 and 3.27 QALY), and had relatively low ICER (3482.36 and 2745.35 per QALY gained) relative to BSC strategy.
Swapping strategy showed favorable cost-effectiveness for established PsA and early PsA. The costs of biologic agents are offset by the gain in benefits from long-term HAQ reduction.