

COst per number needed to treat and treatment cost of baricitinib versus adalimumab on rheumatoid arthritis treatment in the brazilian private healthcare system

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Introduction: Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease. It is characterized by a persistent synovitis, progressively causing cartilage destruction and bone erosion, leading to joint deformation and disability. RA patients may have highly variable patterns of radiologic progression over time. In any case, joint damage and functional status loss appear since the early disease stages. RA can potentially involve other organs, causing, for instance, severe respiratory and/or cardiovascular complications; for this reason, a higher mortality risk (as compared with general population) is associated with RA. Biological disease-modifying antirheumatic drugs are recommended for use particularly in rheumatoid arthritis patients who had an inadequate response to methotrexate. **Objectives:** Using data on efficacy from the RA-BEAM trial (American College of Rheumatology (ACR) indices) and number needed to treat (NNT) (Rovasio et al 2018), the present economic analysis compared the cost per NNT (ACR 20, 50 and 70) on week 24 of Baricitinib (BARI) (4mg) and Adalimumab (ADA) (40mg) in adult patients with moderately to severely active RA with an inadequate response to methotrexate (MTX) in Brazil (R\$, local currency). In addition to that, the direct treatment cost on weeks 12, 24 and 52 was also compared. **Methods:** The economic analysis for both biologic DMARDs (BARI 4mg and ADA 40mg) was developed considering the number of doses on each label with 12, 24 and 52 weeks of treatment; NNT on week 24 according to Rovasio et al 2018; drug acquisition cost using as reference the *Brasíndice* pharmaceutical guide (wholesale price + 18% taxes); the cost of MTX was not considered. **Results:** BARI presented lower treatment cost compared to ADA on weeks 12, 24 and 52, demonstrating 48% of reduction. BARI also presented lower NNT compared to ADA on week 24. The cost per responder considering ACR (20, 50 and 70) for BARI was lower compared to ADA (ACR20: R\$66.915 vs R\$162.096; ACR50: R\$79.850 vs R\$183.741; ACR70: R\$114.178 vs R\$348.723, respectively). **Conclusion:** The results from this economic evaluation, based on the cost per NNT (Rovasio et al 2018) in combination with drug acquisition cost (*Brasíndice* pharmaceutical guide), showed that BARI is a more cost-effective therapeutic option when compared with ADA in the treatment of moderately to severely active RA in adult patients with an inadequate response to MTX.