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Cost-utility of celecoxib compared with NSAID plus PPI in patients with osteoarthritis

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Objectivos (Objectives): Osteoarthritis is a common condition that causes pain, disability and reduced physical functioning. Treatment costs of osteoarthritis to the Portuguese National Health Service are substantial and rising. Celecoxib and non-steroidal anti-inflammatory drugs (NSAIDs) are effective treatments for the symptomatic relief of osteoarthritis. This study aims at evaluating the cost-utility of celecoxib compared with NSAIDs plus proton-pump inhibitors (PPIs) for treatment of Portuguese patients with osteoarthritis.

Metodologia (Methodology): A decision analytic model was developed to predict quality adjusted life-years (QALY) and associated costs of osteoarthritis treatment over a period of 6 months. Treatment strategies were modelled according to Portuguese clinical practice: treatment with NSAIDs (diclofenac 100-150mg/day or naproxen 1000mg/day) plus PPI (omeprazol 20mg/day) followed by switch to celecoxib in case of no pain control, compared with treatment with celecoxib followed by switch to NSAIDs plus PPI. A systematic review of randomised controlled trials was undertaken in order to inform decision model effectiveness parameters, defined as probability of pain control. Bayesian statistical meta-regression modelling was used to estimate treatment effect. Anti-inflammatory adverse events probabilities and utilities were determined through literature review. Resource use was elicited through a panel of five Portuguese rheumatologists. Unit costs were extracted from Portuguese official sources. Cost-utility estimates robustness was assessed by performing adequate sensitivity analyses. A societal perspective was adopted.

Resultados (Results): Seven randomized controlled trials (RCTs) were included in the meta-regression synthesis modelling. Selected studies compared celecoxib 200 mg/day with a set of non-selective NSAIDs or NSAIDs plus PPI. Celecoxib was found to have 1.8% higher pain control probability compared to non-selective NSAIDs for the symptomatic treatment of osteoarthritis. Expected costs per patient for treatment with celecoxib and NSAID plus PPI treatment were 182.89€ and 183.30€, respectively. Estimated incremental effectiveness was of 0.0005QALY, in line with published evidence. Incremental cost-utility ratio is estimated at -838.66€/QALY. Sensitivity analysis indicated celecoxib is dominant and cost-effective at a threshold of 35,000€/QALY.

Conclusões (Conclusions): Treatment with celecoxib, compared with NSAIDs (diclofenac 100-150mg/day or naproxen 1000mg/day) plus PPI (omeprazol 20mg/day) treatment, in patients with osteoarthritis in Portugal, is more effective and cost-saving.