Cost effectiveness of duloxetine compared with venlafaxine-XR in the treatment of major depressive disorder

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Purpose: To determine the cost effectiveness of duloxetine, a new serotonin norepinephrine reuptake inhibitor, when compared with venlafaxine-XR in treating major depressive disorder.

Methods: A cost effectiveness analysis, using a decision tree modelled outpatient treatment over 6 months. The analytic time horizon was 6 months. Analytic perspectives were those of society (all direct and indirect costs) and the Ministry of Health of Ontario (MoH) as payer for all direct costs. Rates of success and dropouts were obtained from a meta-analysis of randomized placebo-controlled trials. Costs were taken from standard lists, adjusted to 2005 Canadian dollars; discounting was not applied. One-way sensitivity analyses were performed on monthly acquisition costs and success rates; Monte Carlo analysis examined all parameters over 10 000 iterations.

Results: From both perspectives, outcomes all numerically favoured venlafaxine-XR (Expected success = 57% and 53%; symptom-free days [SFDs] = 57.03 and 52.72 for venlafaxine-XR and duloxetine, respectively). Total expected costs/patient treated were, Can$6551 and Can$7081 (MoH), Can$19 997 and Can$20 987 (societal perspective), for venlafaxine-XR and duloxetine, respectively. Expected costs/SFD were Can$115 and Can$134 (MoH) and Can$351 and Can$398 (societal viewpoint) for venlafaxine-XR and duloxetine, respectively. Although results were sensitive to changes in success rate within the 95% CI, Monte–Carlo analyses using the ICER (incremental cost effectiveness ratio) as outcome found venlafaxine-XR was dominant in approximately 78% of scenarios in both perspectives.

Conclusions: Differences in pharmacoeconomic outcomes found were modest, but in all cases, favoured venlafaxine-XR over duloxetine. Therefore, a possible advantage may exist at the population level in the treatment of major depressive disorder in Canada. Ultimately, a head to head study of the two drugs would be needed to confirm these findings.

Figure 1. Outpatient decision-tree model for the treatment of major depressive disorder with either duloxetine or venlafaxine-XR in Canada. SNRI = serotonin-norepinephrine reuptake inhibitor; ADR = adverse reaction; LOE = lack of efficacy; SSRI = selective serotonin reuptake inhibitor

Figure 2. Incremental cost effectiveness ratio scatter plots of Monte-Carlo sensitivity analysis comparing duloxetine with venlafaxine-XR in the treatment of major depressive disorder in Canada. (A) Perspective of the Ministry of Health (B) perspective of society