Cost Utility Analysis of Vagal Nerve Stimulators (VNS) versus Medical Treatments for Refractory Epilepsy in Turkey

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Aim: Our aim is to determine the considerable gains achieved by Vagal Nerve Stimulators (VNS) reimbursed by the Social Security Institution, the only reimbursement agency in Turkey, through conducting a cost utility analysis for the refractory epilepsy patients whose treatment is still in progress. Methodology: The Social Security Institution of Turkey (abbreviated as SGK) covers almost all her citizens under a general health insurance policy via the health reforms initiated in 2007. With the help of a logging system called MEDULA since 2008, all the reimbursement processes of each patient who likes to receive treatment from any healthcare centre or institution can easily be tracked down, among whom 1004 refractory epilepsy patients were identified and analysed in 2009. Also, all the medical devices introduced to the Turkish market, and the device guidelines determined in accordance with the standard device sets in which information on single barcode prices and catalogue information take place – through which the products can easily be tracked in comply with the rules set by GS1 and HIBBC with an internationally validated number have been classified according to their GMDN and UNSPSC codes. All the barcodes of the products matching up with GMDN codes of vagal nerve stimulators from UBB and also the patients taking these barcoded medications from the MEDULA's database have been identified. The data used in the study cover the 65 patients using vagal simulators and 77 randomly selected patients whose medical treatment is in progress. The real world data gathered from this huge database in Turkey have been processed via the software programs, MS Access 2007, MS Excel 2007 and SPSS 17.0, and selected and sorted out in accordance with the criteria and then their cost-effectiveness / cost utility analyses have been carried out.

Results: The annual median medication cost of a refractory epilepsy patient out of the 65 patients with vagal simulators has been estimated to be €796.16, average consumable medical material cost €9280.94, average inpatient cost €83.11. On the other hand, The yearly median medication cost of a refractory epilepsy patient out of the 77 patients whose refractory medical treatment is in progress has been found as €509, average consumable medical material cost €2382.16, average inpatient cost €81.38, and average intervention cost has been estimated to be €16297.95. While the total average annual cost of a VNS patient has been determined to be €13537.06, that of a patient taking medical treatment has been estimated to be €19270.51. The cost of new healthcare technology (VNS) patented by a Turkish manufacturer has been determined as €47498.47 per QALY and the total cost of a patient on the former technology medication has been found as €67615.82 per QALY.

Conclusion: VNS is a cost-effective technology for the refractory epilepsy patients compared to the former technology. The Social Security Institution aims at contributing to the payments of the reimbursement agency in medical consumable materials, equipment and also devices as she formerly did in medications as a part of her economic evaluation techniques.