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152 A MEASURE FOR ESTIMATING THE MAGNITUDE OF UNNECESSARY OVERTREATMENT, OVER TESTING AND OVER PREVENTING

Mohammad Zakaria Pezeshki,[1] Sina Pezeshki[2]. [1]*Department of Community Medicine, Tabriz University of Medical Sciences Iran;* [2]*Independent Researcher Iran*

10.1136/bmjopen-2016-015415.152

There is not any summary measure in EBM for showing the magnitude of unnecessary medical interventions including over-treatment, over testing and over preventing. Based on the finding of a valid and reliable double blinded randomized controlled clinical trial (RCT) with a good external validity, two

groups of patients may receive unnecessary overtreatment: the first group consists of patients who will not respond to medication or surgery. The second group consists of patients who respond to the placebo or sham surgery. Here we define an index to cover these two groups: Unnecessary Overtreatment Index (UOI). Based on the finding of RCTs, the UOI is defined as summation of two proportions: the proportion of patients who do not respond to medication/surgery and the proportion of patients who are improved by the placebo or sham surgery intervention as well. For example if the RCT shows that 30/100 of patients who received medication/surgery have improved and for the placebo intervention group only 20/100 patients have also improved, then the UOI is summation of (1–30/100) and 20/100. It means if a physician prescribes the medication/surgery to 100 patients then 90 of these patients will be treated unnecessarily. Seventy out of 90 are patients who will not be improved and 20 out of 90 are patients who would be improved even if they received placebo intervention. The 95% Confidence Interval can be calculated for UOI. An interesting point is the relation of UOI with Absolute Risk Reduction (ARR). Considering the definition of UOI and ARR, we will show that UOI is equal to "1- ARR. As in the example, ARR is 10/100 (30/100–20/100). Then, it can be stated that UOI=1–10% =90%. If the RCT is a diagnostic trial examining a diagnostic test, then we can define Unnecessary Overtesting Index and if the RCT examines a preventive intervention, we can define Unnecessary Over preventing Index. The utility of UOI in clinical practice will be discussed with demonstrating a few examples.

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