

Factors Associated with T2DM Treatment Choice Across Europe

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Background: National guidelines for type 2 diabetes mellitus (T2DM) differ in treatment recommendations with regard to choice of antidiabetic drug classes. **Objectives:** To explore demographic and clinical factors associated with T2DM treatment at time of treatment intensifications across Europe.

Methods: Antidiabetic drug prescription records were obtained from electronic medical record databases for a 5-year study period (2007-2011/2008-2012) in the Netherlands (NL), Italy (IT), Spain (ES) and the United Kingdom (UK). Oral monotherapy was defined as first line, oral dual therapy as second line, >2 oral treatments or oral combined with an injectable as third line and an injectable only as fourth line treatment. Treatment intensification was defined as first initiation of a higher line of treatment. Potential associated factors included general characteristics, comedication, comorbidities and clinical parameters and were evaluated using multivariate logistic regression.

Results: We included 48,479 (NL), 67,751 (IT), 348,572 (ES) and 152,544 (UK) patients. First line SU was associated with age >75 years (RRs from 2.04 (ES) to 3.66 (IT)) and with renal comorbidity (RRs from 1.36 (NL) to 2.65 (UK)), but inversely associated with BMI ≥ 25 kg/m² in UK (RRs from 0.42 (UK) to 0.68 (ES)). For second line, age >75 years was associated with metformin + SU (RRs from 1.04 (ES) to 1.34 (IT)), and renal comorbidity with SU + DPP4 in UK (RR 1.26) and NL (RR 2.31). BMI ≥ 30 kg/m² was associated with metformin + TZD (RRs from 1.26 (ES) to 1.79 (NL)) and with metformin + DPP4 in NL (RR 1.34) and UK (RR 2.38). For third line, age >75 years (RRs from 2.60 (ES) to 3.56 (UK)) and renal comorbidity (RRs from 1.61 (ES) to 3.45 (UK)) were associated with SU + insulin. BMI ≥ 30 kg/m² decreased the probability of receiving metformin + SU + TZD as third line in UK (RR 0.90), but increased the risk in IT (RR 1.34) and ES (RR 1.51). High BMI was also inversely associated with any third line containing insulin. For fourth line women were more likely to receive GLP-1 in UK and ES.

Conclusions: The results from this study suggest that age and renal comorbidity were the predominant factors associated with the choice of T2DM treatment intensifications.