

Do diabetic patients receiving an innovative treatment have a lower risk of being hospitalized? Evidence from French insurance claims data

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Abstract

The French national health insurance agency raised the alarm: the increasing number of patients with diabetes combined with the dissemination of innovative therapies could rapidly and considerably increase the budget burden of the disease. However, the adoption of new drugs is not necessarily expenditure-increasing since it may contribute to improve population health, and thus may reduce the use of other expensive health care services. For instance, in the case of diabetes, new oral treatment molecules (DPP-4 inhibitors and GLP-1 analogues) achieve improvements in glycemic control and could lower the number of hospitalizations due to complications. Yet, robust evidence on the consequences of introducing those innovative molecules has remained limited.

Using the panel claims dataset of a major French social security provider, we investigate whether diabetic patients taking an innovative oral treatment have a lower hospital use. We include 2,206 individuals by propensity score matching strategy according to the probability of taking an innovative oral treatment in 2013. We use two multivariate difference-in-difference regression models: 1/ of hospital use likelihood (logistic model) and, 2/ of the length of stay (zero inflated Poisson model). Whatever the pre- and post-periods considered (e.g. 2012 vs 2014; 2011 vs 2015), no significant difference remains between the two groups concerning the likelihood of being hospitalized. However, results show a substantial negative impact on the length of stay, that is, taking an innovative treatment significantly decrease the number of days spent in a hospital in the year, all other thing being equal.

Through that counterfactual analysis, our results thus provide decision-makers with information regarding the impact of taking an innovative oral antidiabetic molecule on hospitalization. We finally discuss the policy implications of these findings.