Patient-level estimates of the direct medical cost of diabetes-related complications

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Introduction

It cost at least 548 billion US dollars to treat diabetes in 2013 worldwide, and the cost is projected to exceed 627 billion US dollars by 2035,[1] with the management of diabetes-related complications as the major driver of cost. In order to optimize the care for diabetic subjects and resources allocation, it is important to evaluate the cost-effectiveness of different diabetes management strategies. Therefore, it is crucial to have an accurate and comprehensive estimate of the direct medical costs of each complication in diabetes at patient-level.

Regarding the patient-level costs, several studies have estimated the costs of one selected sample[3-7] or modelled cost structure[8].

Method

A retrospective cohort study was conducted among 206,238 diabetic subjects from a territory-wide administrative database over 6 years (2008-2013). Subjects inclusion criteria

- Diagnosed subjects with diabetes who were managed in public healthcare sector on or before 1st January 2009
- Without previous diagnoses of diabetes-related complications at baseline
- At least one healthcare utilization record each year until 31st December 2013
- Stay survive over the study period (2009-2013)
- Aims

The aim of this study was to estimate the patient-level direct medical costs of various diabetes-related complications using a representative, population-based sample.

A total of 127,218 subjects were included for analysis. Over 5 years follow-up, 16,931 subjects developed one or more diabetes related complications.

Results

Table 1. Basic characteristics of study subjects

Table 2. Unit cost of Healthcare service

Table 3. Trend of annual average costs during follow-up (USD)

Table 4. Direct medical costs associated with diabetic complications

Results

The annual direct medical costs were calculated for each subject at each year using a bottom-up approach. The trend of average annual costs was described. We employed panel data regression to investigate the impact of each diabetic complication on direct medical costs in the event year and subsequent years, adjusting for age, gender, Charlson Comorbidity Score and psychological diseases.

There were wide variations in direct medical cost in event year and subsequent years across different major complications. These data would be useful for economic evaluations of diabetes prevention or treatment programs.

Conclusion


References


Figure. Trend of annual average costs during follow-up (USD)

For example, the annual direct medical cost for a 69 year old male patient with a new stroke and history of IHD equals

Thus, the annual direct medical cost for this patient = 2,325 (USD)

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