

BACKGROUND

Reducing the burden of late-life morbidity requires an understanding of the mechanisms of ageing-related diseases (ARDs), but also of their early healthcare management.

This study aimed at identifying trends into healthcare consumptions from patients with early ARDs to provide better understanding of ARD management.

BACKGROUND

Database

We used a representative sample (1/97th) of the French National Health Data Information System (SNDS), which gathered medical claims from around 700,000 insured individuals.

Scope of disease

We pre-selected 35 ARDs identified from the literature [1] and grouped them into 10 groups of ARDs, rheumatological diseases, eye diseases, neurological diseases, mental disorders, endocrinal disorders, hemopathy, urothelial disorders, cardiovascular diseases, respiratory disease, and cancer.

ARDs were identified through main diagnoses (ICD-10) reported for inpatient admission claims. Outpatient management was not considered for this study due to missing diagnosis or treatment indications.

Design of the study

Admissions for the period 2015 to 2019 were scanned to identify index admission for ARD. An admission for a patient with an ARD was considered as index when a minimum of 10-year wash-out period (period without diagnosis of ARD) was observed.

Definition of early ARD

Early ARD was defined as the occurrence of one of the pre-defined ARD at an early onset age of 2-fold z-score before the average age of onset of the respective diseases.

Statistical analysis

Patients with early ARD were matched with patients of same age, sex, region, and calendar year at ratio 1:20 to constitute a control cohort. A case-control comparison of healthcare consumptions was conducted for general practitioner visits, specialist visits, nurse cares, physiotherapists, pharmacy, and admissions over the 5 years preceding index ARD admission.

Figure 1. Design of the study



CONCLUSION

Patients with early ARDs are at increased risk of healthcare consumptions years before their ARD diagnosis compared to general population.

Early signals of ARD can be detected from claims database with extended historical records.

References

[1] Kuan V, Fraser HC, Hingorani M, Denaxas S, Gonzalez-Izquierdo A, Direk K, Nitsch D, Mathur R, Parisinos CA, Lumbers RT, Sofat R, Wong ICK, Casas JP, Thornton JM, Hemingway H, Partridge L, Hingorani AD. Data-driven identification of ageing-related diseases from electronic health records. *Sci Rep.* 2021 Feb 3;11(1):2938.

RESULTS

A total of 3,718 patients with early ARDs were identified, corresponding to an incidence rate of 0.5 per 1,000 patient-year for the period 2015-19. One year before their early ARD index admission, healthcare consumptions were 2 to 3-fold higher than controls. Evolution of consumptions showed that all types of healthcare started increasing around 5 years before early ARD index admission. Healthcare consumptions remained stable for the control cohort.

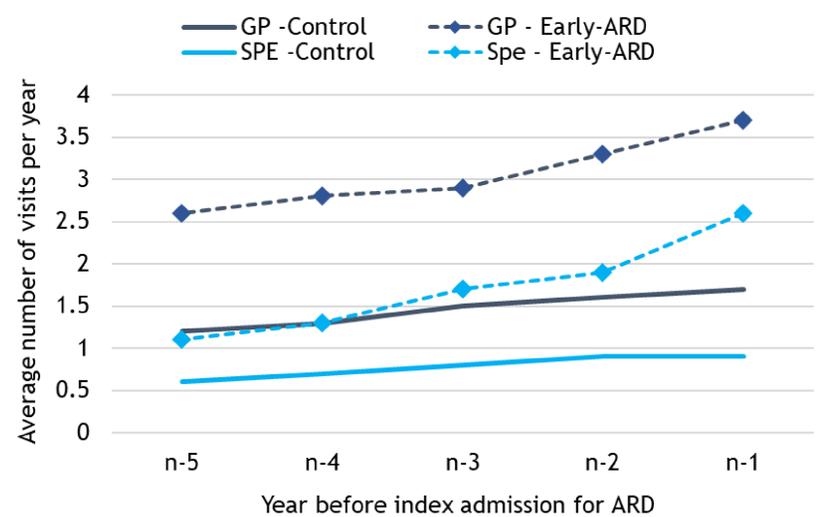


Figure 1. Evolution of GP and specialist visits before index ARD diagnosis

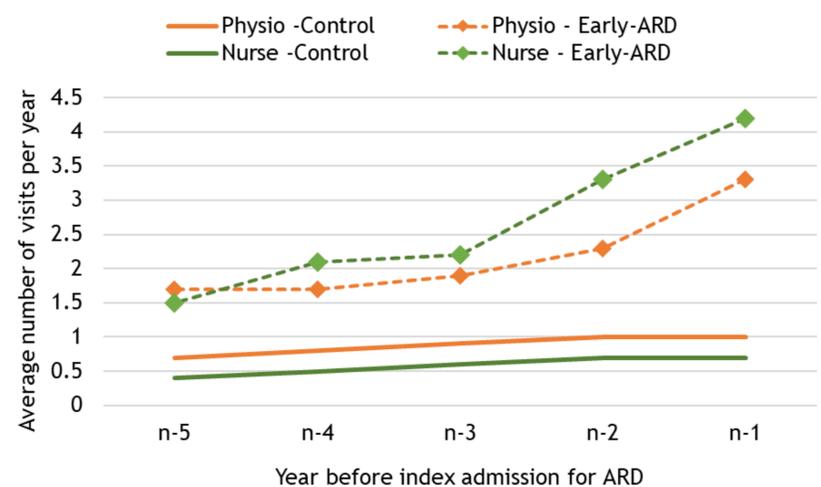


Figure 2. Evolution of physiotherapist and nurse cares before index ARD diagnosis

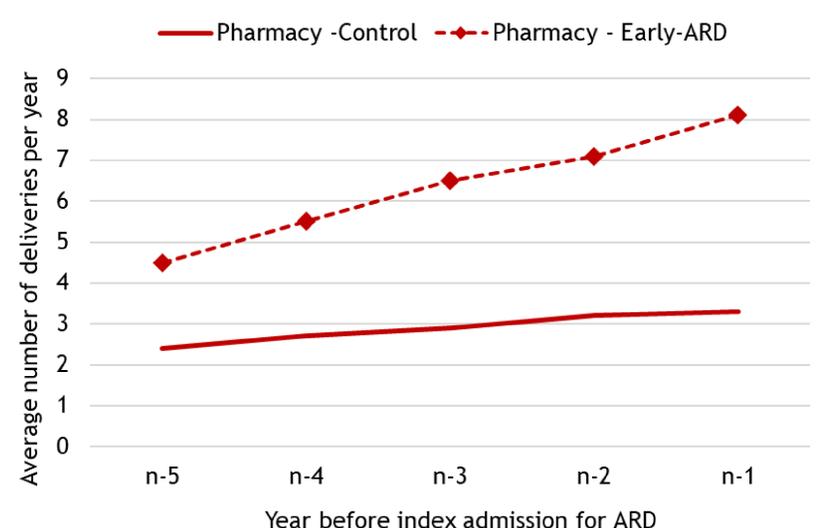


Figure 3. Evolution of pharmacy deliveries before index ARD diagnosis