

Overview of the use of direct oral  
anticoagulants and warfarin in persons  
18 years of age and older covered by  
Québec's public prescription drug  
insurance plan  
English summary

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Direction du médicament

This is the English summary of the guidance entitled Portrait de l'usage des anticoagulants oraux directs et de la warfarine chez les personnes de 18 ans et plus couvertes par le régime public d'assurance médicaments du Québec published in April 2019.

The complete version of this guidance (in French) is available on the website of INESSS in the Publications section.

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# **SUMMARY— STATE OF PRACTICE**

## **Introduction**

INESSS's last work concerning direct oral anticoagulants (DOACs) and warfarin dates back to 2014. There have been many changes since then, and, with the aging of the population, the use of these drugs in Québec has increased. This is why the Ministère de la Santé et des Services sociaux (MSSS) has made the optimal use of oral anticoagulants, including warfarin, a priority in the "clinical relevance project - optimal use of drugs". The overall objective of this study was, therefore, to provide an overview of the use of DOACs and warfarin in Quebecers 18 years of age and older covered by the public prescription drug insurance plan (PPDIP) from 2007 to 2017. The study also examined a population of new DOAC or warfarin users in 2015.

## **Methodology**

A cross-sectional study and a descriptive retrospective cohort study were carried out using the Régie de l'assurance maladie du Québec (RAMQ)'s administrative databases (ADB). The cross-sectional study first estimated the age-adjusted prevalence of DOAC and warfarin use in PPDIP members 18 years of age and older from 2007 to 2017 and provided a description of the users' characteristics and their treatments. The descriptive retrospective cohort study examined, for the year 2015, a population of new DOAC or warfarin users 18 years of age and older who were covered by the PPDIP. These new DOAC or warfarin users had to have been given at least one prescription for one of these drugs during the period from January 1 to December 31, 2015. The date of the first billed prescription during this period served as the index date. More specifically, the new users were persons in whom no active prescription for a DOAC or warfarin was found for the 365 days preceding their index date. They therefore had to have been covered by the PPDIP uninterruptedly during the 365 days preceding their index date, and they had to have been covered by it uninterruptedly during the 365 days following their index date or up to their date of death for those who died during follow-up. The characteristics of these new users and their treatments were described. Special attention was given to the new DOAC or warfarin users in 2015 who had been diagnosed with non-valvular atrial fibrillation (NVAf) or venous thromboembolism (VTE), according to the ADBs.

## **Results**

The age-adjusted prevalence of DOAC or warfarin use among all 18-year-olds and older covered by the PPDIP increased from 4.0% in 2007 to 5.3% in 2017. A trend change is observed in 2010: it was from this point on that the adjusted use prevalence rates increased the most. The age-adjusted prevalence of warfarin use decreased from 2007 to 2017 (starting mainly in 2010-2011), while that of DOAC use increased during this period.

From December 1 to January 31, 2015, 28,767 18-year-olds and older covered by the PPDIP started treatment with a DOAC or warfarin. Their mean age was 72 years, and the proportions of new male and female users were similar. In most cases, the index date prescription for warfarin or a DOAC was written by a family physician or a cardiologist. With regard to the three DOACs, a very low proportion of the new users in 2015 took their DOAC concomitantly with a drug with a high drug interaction potential. More than 20% of the new warfarin or dabigatran users switched to another treatment during follow-up.

Among the 28,767 new DOAC or warfarin users in 2015, the ADBs showed that 8409 had been diagnosed with NVAf and that 5073 had been diagnosed with VTE. Among the 8409 patients with a diagnosis of NVAf, according to the ADBs, in contrast to the higher doses, the lower DOAC doses were usually taken by the most vulnerable patients, that is, those who were older, who more frequently had each of the medical histories of interest and who usually had a CHADS<sub>2</sub> score of 3 or more. More than 25% of the new warfarin users and more than 22% of the new dabigatran users switched to another treatment during the year following their index date, while more than 90% of the new rivaroxaban and apixaban users continued with the same treatment during the year after it was initiated. Persistence with pharmacological treatment measured at 1 year using the anniversary method was 87.2% in the population of new DOAC users aged 18 years and older with NVAf. Among the 5073 patients with a diagnosis of VTE, according to the ADBs, the new warfarin and apixaban users were, on average, older than the new rivaroxaban users. A family physician was the prescriber of a new treatment with warfarin, rivaroxaban or apixaban in more than 57% of the cases. A larger proportion of new warfarin and apixaban users had a CHADS<sub>2</sub> score of 3 or more than did the new rivaroxaban users.

## **Conclusions**

The prevalence of the use of DOACs, especially rivaroxaban and apixaban, increased during the study period (starting mainly in 2010-2011), while that of warfarin decreased. The interest in this class of drugs seems quite real, possibly because of their ease of use and the availability of evidence of their efficacy and safety.

Lastly, the data presented in this overview were also used by INESSS to create two optimal use guides (OUGs) on the use of DOACs and warfarin in adults (to treat atrial fibrillation and venous thromboembolism). They were, in fact, one of the sources of contextual data taken into consideration when developing the clinical recommendations, and they were used to establish certain warnings.

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