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PhD in Pharmaceutical Sciences
2021-2022

INVITATION to the Public defence of

Souad MOUDALLEL

To obtain the academic degree of

'DOCTOR OF PHARMACEUTICAL SCIENCES'

Challenges with appropriate prescribing of direct oral anticoagulants and recommendations to improve their rational use

The defence will take place on

Tuesday, 6 September 2022 at 5 p.m.

In Auditorium Vanden Driessche

Faculty of Medicine and Pharmacy, Laarbeeklaan 103, 1090 Brussel

and can be followed online, accessible through the following link:

https://gf.vub.ac.be/redirects/PhD_defense_Souad_Moudallel.php

Summary of the dissertation

Atrial fibrillation (AF) is the most common cardiac arrhythmia in adults and is associated with an increased risk of stroke, where anticoagulation therapy has proven to be effective and lifesaving. Although direct oral anticoagulants (DOACs) have become the first choice for stroke prevention in most patients with AF, several challenges occur with the use of these agents complicating their safe and efficacious use by health care professionals as well as patients.

First, this dissertation showed that inappropriate prescribing of DOACs is still common with underdosing being more prevalent than overdosing. The complexity of appropriate DOAC dosing, depending on aspects such as therapeutic indication, co-medication, renal function and other patient-related factors such as age and/or weight, as well as the setting where therapy with DOACs is initiated (prehospital vs. hospital) contributed to prescribing errors. Underestimation of the necessity for dose reduction and insufficient attention for an impaired renal function may be explanations in case of overdosing, whereas fear for bleeding and insufficient knowledge of the set of conditions requiring a dose reduction may lead to underdosing. In addition, we assessed determinants for under- and overdosing of DOACs in AF patients. Moreover, we showed that interventions by clinical pharmacists were highly accepted and can reduce inappropriate prescribing, strengthening the recommendation that clinical services led by pharmacists can play an important role in assisting physicians during the prescription process of high-risk medications such as the DOACs. Furthermore, we showed that the adherence rate to the DOACs among AF patients is suboptimal with assessment of determinants for suboptimal DOAC adherence. Based on pharmacovigilance data, we compared the gastrointestinal safety profile of the DOACs. Our work provides recommendations and strategies to improve appropriateness of prescribing and drug adherence amongst patients treated with DOACs.

Curriculum Vitae

Souad Moudallel was born on August 13th 1989 in Sint-Agatha-Berchem. She completed secondary school, math-sciences, after which she started her academic career at the Vrije Universiteit Brussel (VUB). In 2012, she graduated as a pharmacist and Master in pharmaceutical care at the VUB and was awarded the price for the best study results. After obtaining her Master's degree, she started working as a teaching assistant at the VUB and in March 2016, she took on the challenge to pursue a PhD under the supervision of Prof. Steurbaut, Prof. Dupont and Prof. Cornu where she focused on challenges with the appropriate prescribing and use of the direct oral anticoagulants in clinical practice. During her PhD, she published four manuscripts in peer-reviewed journals as first author (a fifth has been submitted) and co-authored one article. She presented her work at several national and international conferences both as oral and poster presentations. In 2018, she was awarded the best poster price at the European Society of Clinical Pharmacy conference in Belfast.

In September 2022, she will make a switch from academia to the industry and start a new adventure as a training associate at Pfizer in Puurs.