VTE Prophylaxis after total hip and knee replacements; How does prescribing in Queensland compare to recommendations from major guidelines?

Nameer van Oosterom[1,2], A/Prof Michael Barras[1,2] and A/Prof Neil Cottrell[2]
[1]Pharmacy Department, Princess Alexandra Hospital. [2]School of Pharmacy, The University of Queensland

Introduction

- Total hip and knee replacements (THR/TKR) have the highest risk of venous thromboembolisms (VTE)
- There are conflicting recommendations for the best VTE prophylaxis (VTEp) regimen post-THR/TKR
- Specifically, the use of aspirin for VTEp is controversial as its safety and efficacy in high risk patients is unknown

Aim

The study aimed to compare VTEp regimens prescribed after THR/TKR to international guidelines.

Methods

Retrospective cohort study of elective TKR/THR between 2017-18 in six major QLD Health Hospitals. Data was collected manually from electronic medical records and was compared to 4 major international guidelines (AAOS, ACCP, NICE and SIGN).

Table 1: Comparison of the adherence of VTE prophylaxis regimens to guideline recommendations

Guideline		NICE N (%)		ACCP N (%)		SIGN N (%)	AAOS N (%)
		THR	TKR	10-14 days	35 days		
All drugs (N=1011)	Adherence based on **total** VTEp	38 (8.7)	34 (5.9)	41 (4.1)	22 (2.2)	584 (57.8)	1004 (99.3)
	Adherence based on **discharge** VTEp	50 (11.5)	73 (12.7)	73 (7.2)	40 (4.0)	584 (57.8)	952 (94.2)
Aspirin (N=425)	Adherence based on **total** VTEp	0 (0.0)	1 (0.2)	1 (0.2)	8 (1.9)	0 (0.0)	425 (100)
	Adherence based on **discharge** VTEp	1 (0.2)	5 (1.2)	13 (3.1)	33 (7.8)	0 (0.0)	425 (100)

'Total VTE prophylaxis' is defined as the sum of inpatient and discharge duration, where 'discharge VTE prophylaxis' is defined as the duration of prophylaxis on discharge only (i.e. inpatient prophylaxis disregarded).
AAOS American Academy of Orthopaedic Surgery, *ACCP* American College of Chest Physicians, *LMWH* low-molecular-weight heparin, *NICE* National Institute of Health and Care Excellence, *SIGN* Scottish Intercollegiate Guidelines Network.

Results

- 1,011 patients were included (THR: 43.1%, TKR 56.9%)
- Mean (±SD) age of 65.9 (±11.0) years, BMI of 32.1 (±7.0) kg/m^2, and 56.4% were female
- Inpatient VTEp was used in 98.1% of patients and discharge VTEp in 94.3%
- Low-molecular weight heparins (LMWH) were the most used drug for inpatient VTEp (98.1%) and aspirin for discharge VTEp (42.0%)
- The most used VTEp regimen was 5 days of LMWH followed by 6 weeks of aspirin 150mg daily on discharge (19.3%)

Results (cont)

- Adherence rates to guidelines differed considerably from 2.2% for ACCP to 99.3% for AAOS (Table 1)
- Adherence rates with aspirin usage were extremely low except for AAOS which recommends aspirin irrespective of dose or duration

Conclusion

While the use of VTEp was high, currently prescribing differs to guidelines, specifically with duration of VTEp. This variability highlights the uncertainty with what Is the most appropriate regimen. Further studies are required to evaluate the safety of the longer regimen observed.

Acknowledgements
Metro South Research Support Scheme which has financially supported the investigative team on the ARODE Study (Aspirin Resistance in Obese, Diabetic and Elderly orthopaedic patients)

n.vanoosterom@uq.edu.au

2021 Embracing diversity in healthcare
Princess Alexandra Hospital Health Symposium
24–27 August 2021
Queensland Government