Aspirin for Thromboprophylaxis in Orthopaedic Surgery

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Background

Venous thromboembolisms (VTE) is a leading cause of preventable death responsible for 10% of inpatient mortality. Total hip and knee arthroplasties (THA/TKA) confer one of the highest risks of VTE; thus appropriate prophylaxis is imperative. Aspirin for VTE prophylaxis is controversial but has grown in popularity internationally; although the rate of use in Australia is unknown. In addition aspirin resistance has not been investigated in these patients.

Aim

1. To investigate if there are relationships between the choice of prophylaxis and potential risk factors for VTE and aspirin resistance
2. To determine the frequency of aspirin use VTE prophylaxis post-THA/TKA

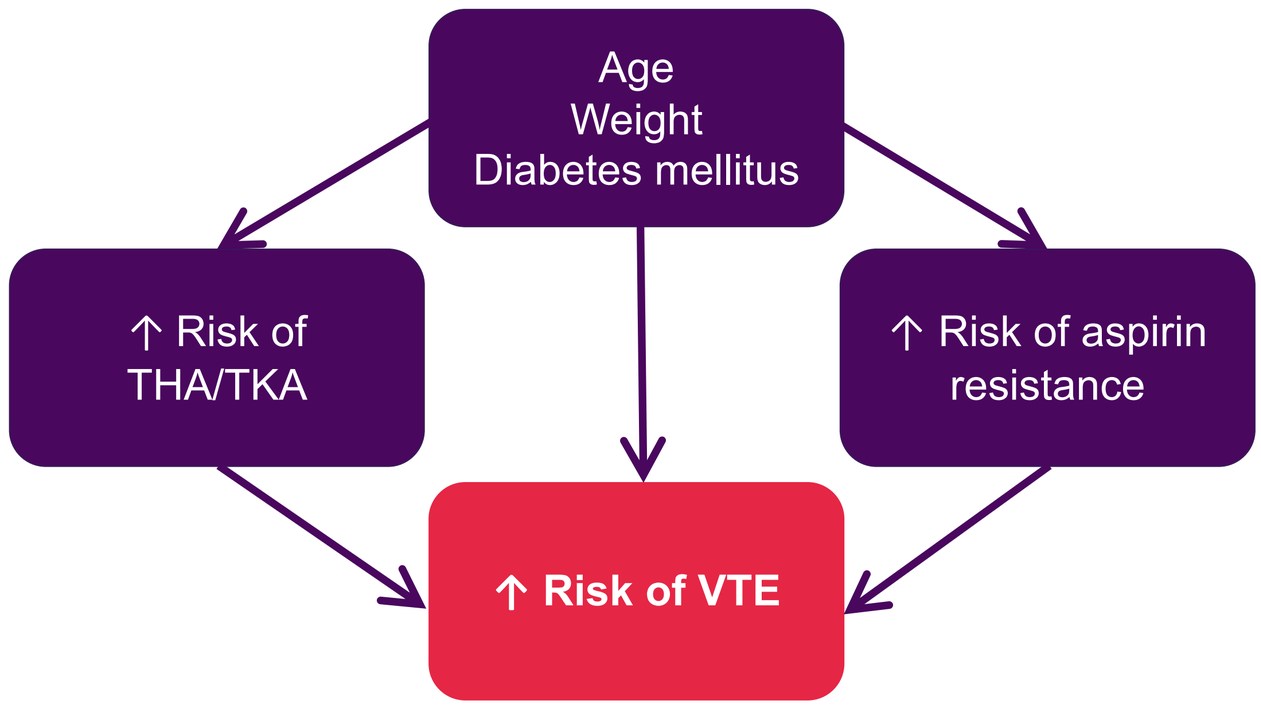

Figure 1: The triad of risk factors for elderly, obese and diabetic patients

Methods

A multicentre, retrospective cohort study of all elective THA/TKA between 01/10/2017 and 30/09/2018 from six Queensland Health Hospital, cross-matching patient and surgical factors with drug regimen.

Results

- 406 patients (196 THA and 210 TKA) were assessed (Table 1)
- No correlation existed between patient and surgical factors with drug selection (P>0.05)
- Drugs used; rivaroxaban (43.8%, n=178), aspirin (29.1%, n=118), dalteparin (14.5%, n=59) and no prophylaxis (9.1%, n=37) with the mean (SD) duration of prophylaxis of 23.8 (14.6) days (Figure 2)
- Patients prescribed aspirin were elderly (66.7%, age≥60), obese (58.1%, BMI≥30), and diabetic (18.8%) which are risk factors THA/TKA, VTE and aspirin resistance (Figure 1)
- Five (1.23%) episodes of haemorrhage and 18 (4.43%) VTEs occured within 60 days of discharge

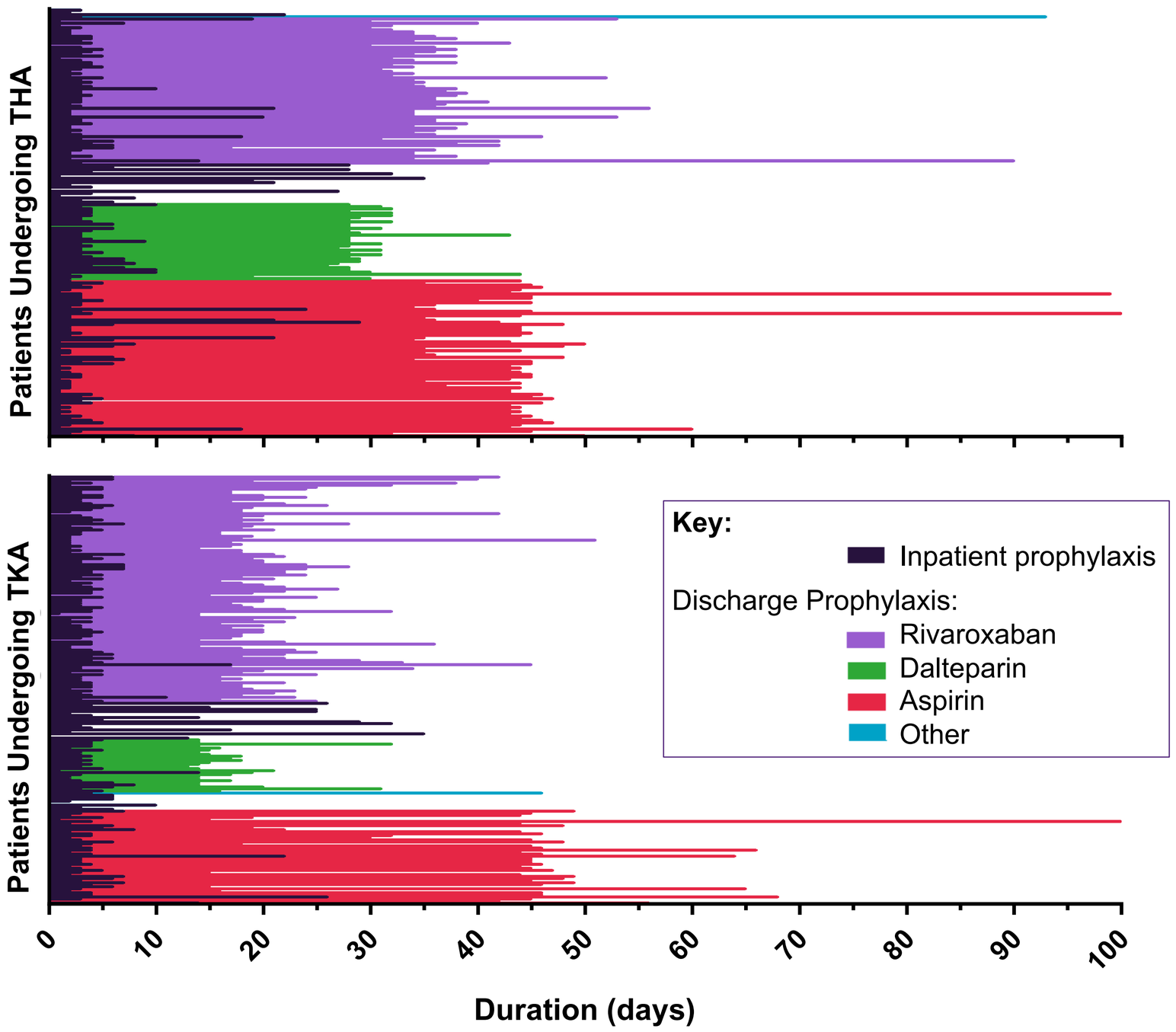

Figure 2: Duration of venous thromboembolism prophylaxis

Table 1: Patient and Surgical Characteristics

Factors	All Patients (n=406)
Age — yr	66.2 ± 11.1
Male sex — no. (%)	178 (43.8)
BMI	32.1 ± 6.7
Risk factors — no. (%)	
Previous VTE	13 (3.2)
Cancer	14 (3.5)
Current smoker	56 (13.8)
Anaesthetic — no. (%)	
General	259 (63.8)
Spinal	147 (36.2)
Surgical approach — no. (%)	
Direct lateral	9 (2.3)
Posterior	125 (31.5)
Anterior	60 (15.1)
Medial parapatellar	203 (51.1)
Time in theatre (min)	171.8 ± 15.5
Prosthesis — no. (%)	
Cemented	195 (48.3)
Noncemented	209 (51.7)
Length of admission—days	6.0 ± 6.5

Conclusion

Aspirin for VTE prophylaxis post-THA/TKA was prescribed in nearly one-third of patients. These patients had a high incidence of risk factors for aspirin resistance. Future research will target quantifying aspirin resistance in these higher-risk patients as they may benefit from alternative regimens.

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