Urology CHEAT SHEETS

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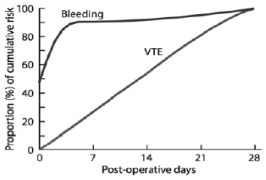
EAU Guidelines on Thromboprophylaxis in Urological Surgery

Thromboprophylaxis post-surgery

Thromboprophylaxis post-surgery:

Timing and duration of thromboprophylaxis: 50% of major bleeds occur between surgery and the next morning and approximately 90% during the first four post-surgical days. In contrast, the risk of venous thromboembolism risk (VTE) is almost constant during these first four post-surgical weeks.

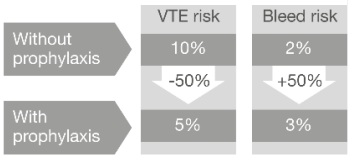


	Proportion of 28-day cumulative bleeding risk
Operation day	47.4%
Post-operative day 1	63.3%
Post-operative day 2	76.6%
Post-operative day 3	84.9%
Post-operative day 4	89.2%
Post-operative day 28	100.0%

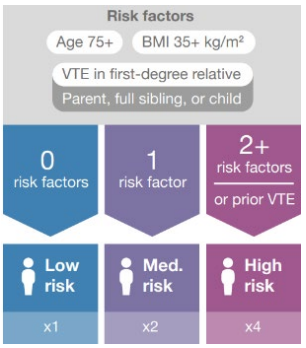
4 weeks is the optimal duration of pharmacological prophylaxis after surgery for all recommendations.
All recommendations are based on a starting time of the morning after surgery.
The recommendations take into account the risks of VTE and bleeding, quality of evidence, and overall patient preferences.
Individual patient preferences should be taken into account, particularly in the case of weak recommendations.

Basic principles for recommeding (or not recommending) post-surgery thromboprophylaxis:

Pharmacological thromboprophylaxis reduces risk of VTE but increases risk of bleeds:



Venous thromboembolism according to patient risk factors:



Figures source: ROTBUS infographic. http://clueworkinggroup.com/2017/03/24/eauthromboprophylaxisguideline/

Recommendations: Quality evidence: QE; Mechanical prophylaxis until ambulation: MPUA

Ambulatory day surgery:

R1. No use of pharmacological prophylaxis (strong, moderate QE), and no use of mechanical prophylaxis (strong, moderate QE).

Open radical cystectomy:

R2. Use of pharmacological prophylaxis (strong, moderate or high QE), and use of MPUA (weak, low QE).

Robotic radical cystectomy:

R3. Use of pharmacological prophylaxis (weak, low QE), and use of MPUA (weak, low QE).

Laparoscopic radical prostatectomy:

R4. Laparoscopic radical prostatectomy (LRP) without pelvic lymph node dissection (PLND): low risk of VTE; use of pharmacologic prophylaxis (strong, moderate QE) and no use of mechanical prophylaxis (weak, low QE); moderate and high risk; no use of pharmacologic prophylaxis (weak, moderate or high QE) and use of MPUA (weak, low QE).

R5. LRP with standard PLND: low risk of VTE; no use of pharmacologic prophylaxis (strong, moderate QE); medium risk; no use of pharmacologic prophylaxis (weak, moderate QE); high risk; use of pharmacologic prophylaxis (strong, high QE); all patients; use of MPUA (weak, low QE).

R6. LRP with extended PLND, low risk of VTE; no use of pharmacologic prophylaxis (weak, moderate QE); medium risk; use of pharmacologic prophylaxis (weak, high QE); high risk; use of pharmacologic prophylaxis (strong, high QE); all patients; use of MPUA (weak, low QE).

Open radical prostatectomy:

R7. Open radical prostatectomy without PLND or with standard PLND; low risk of VTE; use of pharmacologic prophylaxis suggested (weak, moderate QE); medium and high risk; use of pharmacologic prophylaxis recommended (strong, moderate or high QE); all patients; use of MPUA (weak, low QE).

R8. Open radical prostatectomy with extended PLND; use of pharmacologic prophylaxis (strong, moderate or high QE), and use of MPUA (weak, low QE).

Robotic radical prostatectomy:

R9. Robotic radical prostatectomy without PLND; low risk of VTE; no use of pharmacologic prophylaxis (strong, moderate QE) and no use of mechanical prophylaxis (weak, low QE); medium and high risk; no use of pharmacologic prophylaxis (weak, moderate QE) and use of MPUA (weak, low QE).

R10. Robotic radical prostatectomy with standard PLND; low risk of VTE; no use of pharmacologic prophylaxis (strong, moderate QE); medium risk; no use of pharmacologic prophylaxis (weak, moderate QE); high risk; use of pharmacologic prophylaxis (weak, moderate QE); all patients; use of MPUA (weak, low QE).

R11. Robotic radical prostatectomy with extended PLND; low risk of VTE; no use of pharmacologic prophylaxis (weak, moderate QE); medium risk; use of pharmacologic prophylaxis (weak, moderate QE); high risk; use of pharmacologic prophylaxis (strong, moderate QE); all patients; use of MPUA (weak, low QE).

Nephrectomy:

R12. Laparoscopic partial nephrectomy; low and medium-risk of VTE; no use of pharmacologic prophylaxis (weak, low QE); high risk; use of pharmacologic prophylaxis (strong, moderate QE); all patients; use of MPUA (weak, low QE).

R13. Open partial nephrectomy; use of pharmacologic prophylaxis (weak, very low QE), and use of MPUA (weak, very low QE).

R14. Robotic partial nephrectomy; low risk of VTE; no use of pharmacologic prophylaxis (weak, moderate QE); medium risk; use of pharmacologic prophylaxis (weak, moderate QE); high risk; use of pharmacologic prophylaxis (strong, high QE); all patients; use of MPUA (weak, low QE).

R15. Laparoscopic radical nephrectomy; low or medium risk of VTE; no use of pharmacologic prophylaxis (weak, very low QE); high risk; use of pharmacologic prophylaxis (weak, very low QE); all patients; use of MPUA (weak, very low QE).

R16. Open radical nephrectomy; use of pharmacologic prophylaxis (weak, very low QE); and use of MPUA (weak, low QE).

R17. Radical nephrectomy with thrombectomy; use of pharmacologic prophylaxis (weak, very low QE), and use of MPUA (weak, very low QE).

R18. Open nephroureterectomy; use of pharmacologic prophylaxis (weak, very low QE), and use of MPUA (weak, very low QE).

R19. Primary nerve sparing RPLN; use of pharmacologic prophylaxis (weak, very low QE) and use of MPUA (weak, very low QE).

Non-cancer urological procedures:

R20. Transurethral resection of the prostate (TURP) or equivalent procedures; no use of pharmacologic prophylaxis (weak, very low QE); low or medium risk of VTE; no use of mechanical prophylaxis (weak, low QE); high risk; use of MPUA (weak, low QE).

R21. Laparoscopic donor nephrectomy or open donor nephrectomy; low risk of VTE; no use of pharmacologic prophylaxis (weak, very low or low QE) and no use of mechanical prophylaxis (weak, very low or low QE); medium risk patients; no use of pharmacologic prophylaxis (weak, very low or low QE), and use of MPUA (weak, very low or low QE); high risk patients; use of pharmacologic prophylaxis (weak, very low or low QE), and use of MPUA (weak, very low or low QE).

R22. Open prolapse surgery or reconstructive pelvic surgery; no use of pharmacologic prophylaxis (weak, very low QE); low or medium risk of VTE; no use of mechanical prophylaxis (weak, very low or low QE); high risk; use of MPUA (weak, very low or low QE).

R23. Percutaneous nephrolithotomy; no use of pharmacologic prophylaxis (weak, very low QE); low or medium risk of VTE; no use of mechanical prophylaxis (weak, very low QE); high risk; use of MPUA (weak, very low QE).

Different alternatives for pharmacologic prophylaxis: low molecular weight heparins (dalteparin, enoxaparin, tinzaparin), unfractionated heparin. Fondaparinux and direct acting oral anticoagulants have not been sufficiently studied in urology to warrant on-label use for post-surgery thromboprophylaxis.