**Disparate Estimates of Benefit from Post-Discharge** **Anticoagulation in the Literature: Implications for Cost Effectiveness?**

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Introduction and Objective:

Guidelines from the EAU and other organizations recommend prolonged anticoagulation after radical cystectomy for the prevention of venous thromboembolic events (VTE). Low molecular weight heparin is generally the anticoagulant of choice, but it is both expensive and a burden for patients to administer. The benefit of extended duration anticoagulation in guideline statements is estimated using assumptions of risk reduction based on RCTs in other areas (e.g. orthopedics), but do not include randomized studies of cystectomies with no prolonged anticoagulation. In order to provide an estimate of real world risk with and without prolonged prophylaxis, we performed a systematic review of cystectomy studies to assess reported risks of VTE in the published literature.

Methods:

 PubMed and Medline were queried for all studies pertaining to "radical cystectomy" to capture all series of cystectomies. Studies in English reporting on patients operated on after 1990 with data on post-discharge prophylaxis, deep venous thromboembolism (DVT) and pulmonary embolism (PE) were included. Data on in-hospital and post-discharge prophylaxis, rates of DVT, PE and bleeding complications were collected. These data were pooled to estimate rates of these events with and without prolonged anticoagulation.

Results:

 A total of 9,880 abstracts were screened, with 536 full texts examined to yield a final inclusion of 23 studies that included a total of 8,452 post-cystectomy patients (5,509 no post-discharge anticoagulation, 2,943 with post-discharge anticoagulation). This comprised 12 studies with no post-discharge prophylaxis, 10 studies with post-discharge low molecular weight heparin, and 1 study comparing the two strategies. The rate of DVT was 2.8% in the no anticoagulation group, compared to 1.9% in the anticoagulation group (p=0.013). The rate of PE was 1.25% in the no anticoagulation group compared to 1.29% in the anticoagulation group (p=0.96). Limiting only to studies with 28 days of post-discharge prophylaxis yields a summary rate of 1.9% for DVT, 1.1% for PE.

Conclusions:

Prolonged prophylactic anticoagulation in the published literature likely prevents VTE. The apparent benefit from post-discharge prophylaxis in published studies is much more modest than data used for guideline statements which are based on smaller studies prone to statistical fragility and theoretical extrapolated benefits. In cost effectiveness analyses of post-discharge prophylaxis after cystectomy, conservative sensitivity analyses should be employed when estimating benefits of prophylaxis.