Clinical Radiology (2005) **60**, 459–463

Biopsy of the prostate guided by transrectal ultrasound: relation between warfarin use and incidence of bleeding complications

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Received 28 November 2003; received in revised form 12 October 2004; accepted 18 October 2004

KEYWORDS
Prostate; Warfarin; Biopsy; Haematuria; Haematospermia; Rectal bleeding

AIM: To determine the relation between warfarin use and the frequency of bleeding complications after biopsy of the prostate guided by transrectal ultrasound (TRUS).

METHODS: Overall, 1022 consecutive patients with suspected prostatic disease were followed after biopsy. Warfarin and aspirin use was determined on the day of the procedure. A TRUS-guided biopsy was performed and patients were offered a questionnaire to complete 10 days after the procedure, to determine any immediate or delayed bleeding complications. Follow-up telephone calls were made to those who had not replied within the stipulated period.

RESULTS: Of the 1000 patients who replied, 49 were receiving warfarin, 220 were receiving aspirin and 731 were not receiving any anticoagulant drugs. Of the 49 subjects reporting current use of warfarin, 18 (36.7%) experienced haematuria, compared with 440 (60.2%) of the patients receiving no anti-coagulant drugs who reported haematuria. This was statistically significant ($p=0.001$). Of the group receiving warfarin, 4 (8.2%) experienced haematospermia whereas 153 (21%) of the group receiving no anticoagulant medication reported haematospermia. This difference also was statistically significant ($p=0.030$). Rectal bleeding was experienced by 7 (14.3%) of the group receiving warfarin compared with 95 (13%) in the group without anticoagulant medication, but this was not statistically significant ($p=0.80$). We also demonstrated that there was no statistically significant association between the severity of the bleeding complications and medication with warfarin.

CONCLUSION: None of the group receiving warfarin experienced clinically important bleeding complications. Our results suggest that the frequency and severity of bleeding complications were no worse in the warfarin group than in the control group and that discontinuing anticoagulation medication before prostate biopsy may be unnecessary.

Introduction

In the presence of an aging population and growing public awareness, the pressure for screening for prostate cancer is also growing. Screening currently involves a combination of digital rectal examination and prostate specific antigen (PSA) measurement. A suspicious digital rectal examination, high absolute PSA value or rise in PSA level is an indication for prostate biopsy.

Transrectal ultrasound-guided (TRUS) biopsy of the prostate is the current gold standard for diagnosing prostate cancer, and has become a routine procedure performed in the outpatient setting in ever increasing numbers. The complications of TRUS biopsy of the prostate have been

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doi:10.1016/j.crad.2004.10.014

widely reported. The most frequent of these are haematuria (58%), haematospermia (28%) and rectal bleeding (21%). All are usually minor and self-limiting.[1,2] Urinary retention and infection are far less common but often require medical intervention. There are also reports in the literature of pelvic and rectal wall haematomas after prostate biopsy.[3,4]

As with other surgical interventions, concern has been expressed over the effect of warfarin on bleeding complications after TRUS biopsy of the prostate. Warfarin is a coumarin, which exerts its anti-haemostatic effect by antagonizing vitamin K in the liver, thus prolonging the prothrombin time and the international normalized ratio (INR). Its practical effect on procedure-related blood loss, however, is not clear.

No authoritative recommendations exist regarding the management of warfarin before a TRUS-guided biopsy of the prostate. There are conflicting reports as to whether there is an increased risk or amount of bleeding in individuals receiving anticoagulant drugs who undergo percutaneous biopsy or minor surgery.[5] Nor are there to our knowledge any specific studies or substantial recommendations regarding the management of warfarin before TRUS-guided biopsy of the prostate. Not surprisingly, there is considerable variation in practice among radiologists in this respect. Connor et al.[5] determined that 95% of radiologists and 84% of urologists interrupted warfarin therapy before prostate biopsy. There is no record of adverse effects in cases where medication with warfarin was not terminated.[5] Stopping anticoagulation can cause potentially fatal thromboembolic events, but there is also the theoretical risk of significant haemorrhage if anticoagulation is continued.

The aims of this study were to determine the relation between warfarin use and the incidence of bleeding complications after TRUS-guided biopsy of the prostate, and to evaluate whether such complications were more or less common in patients who were not receiving anticoagulant therapy at the time of their biopsy.

Materials and methods

We undertook a prospective assessment of 1022 consecutive patients referred to our department for TRUS-guided prostate biopsy over a 2-year period from January 2000 to January 2002. Referrals were based on elevated PSA, an abnormal digital rectal examination or clinical suspicion.

In our department, we do not routinely discontinue aspirin or warfarin before prostate biopsy, and the use of local anaesthetic is not routine. We also do not measure INR values on the day of the biopsy, but we did retrospectively include the last recorded pre-biopsy INR values in the data collected for this study. All the procedures were performed by senior SpR and consultant grade radiologists. During the study, we changed from systematic quadrant to sextant 18-gauge cores as standard, with additional sampling in areas of concern.

All participants received a detailed information leaflet explaining the procedure. A two-part questionnaire was filled in for each case, the first part at the time of biopsy by the radiologist, and the second part by the patient 10 days after the procedure. Part one included information on age, number of biopsies, aspirin or warfarin usage, any known bleeding disorder, PSA value and prostate volume. The second part was used to obtain data on post-biopsy experiences. Information on fever, the need for medical attention and haemorrhagic complications was collected. Patients were asked about the duration and severity of any bleeding complications, such as haematuria, haematochezia and haematospermia. Severity was assessed on a scale of 0–5 (0 = no bleed, 1 = trace of blood, 2 = mild bleeding, 3 = moderate bleeding, 4 = heavy bleeding, 5 = very severe bleeding). The information sheet contained an explanation about how the categories differed. Values of 0–2 were classed as low severity and values of 3–5 were classed as high severity. A space for additional comments by the patient was provided, and relevant comments were taken into consideration.

On its return, the second part of the questionnaire was matched with the first using an identification number, and the information was recorded on a database. Where the second part was not returned, the participant was phoned and reminded. All incomplete questionnaires were excluded. Individuals with a known bleeding disorder or who were receiving aspirin were excluded from the analysis. Those included in the analysis were either receiving warfarin or were receiving no anticoagulant drugs at all. Categorical data were analyzed using Pearson's chi-squared test and, when expected frequencies were ≤ 5, Fisher's exact test was applied. A value of $p < 0.05$ was considered significant.

Results

Of the 1022 patients assessed, 1000 returned their completed questionnaires. The remaining 22 did