Expedited Radical Orchidectomy for Testicular Cancer: Compromising Fertility Outcomes without Oncological Benefit?

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Testicular cancer (TC) is the most common cancer in young men, who are in their peak fertile years. Modern management strategies are associated with excellent five-year cancer specific survival of 95% [1]. There is increasing evidence of impaired fertility in TC patients. At presentation up to 24% and 50% are azoospermic and oligospermic, respectively, and treatment often leads to further deterioration in semen parameters [1,2]. In spite of this, a significant proportion of patients forgo optimal fertility preservation in order to expedite radical inguinal orchidectomy (RIO), with the perceived benefit of improving oncological outcomes [2].

The European Association of Urology guidance on oncological surgery during the COVID-19 pandemic recommends RIO be performed within 24 hours, but may be delayed up to 72 hours [3]. However, the evidence to justify such expediency are limited to studies which assess the impact of delays in diagnosis and presentation, and do not take account of modern practice with increased awareness of TC among clinicians and patients, the introduction of rapid-access diagnostic pathways and improvements in chemotherapeutic agents [4,5].

We undertook a systematic review which aimed to assess if delaying RIO from the time of presentation in secondary/tertiary care to allow for fertility assessment/preservation negatively impacted on oncological outcomes. Our inclusion criteria included primary studies that compared delayed vs. expedited RIO and at least one oncological outcome. The protocol for the systematic review was prospectively registered on PROSPERO (ID: CRD42021265621), and the electronic search was developed as per Cochrane guidelines covering January 1974 to December 2020. Hand-searching of

the grey literature was undertaken for references of existing systematic reviews and abstracts of major urological conferences.

Our extensive search of the literature did not identify any eligible studies for inclusion (Figure 1). As such, there does not appear to be any evidence which demonstrates an oncological benefit in expediting RIO from the time of presentation in secondary/tertiary care. There may be other factors contributing to the clinical decision to expedite RIO; these may include the perceived psychological benefit of early tumour removal; to facilitate earlier commencement of chemotherapy; or the motivation to treat young patients in an '*aggressive*' manner.

It is important to make a distinction between long delays, which typically range between 30 to over 100 days, in the diagnosis of symptomatic TC patients, which has been the focus of previous systematic reviews, and the decision to postpone surgery for a short period in secondary-care to allow for fertility preservation [4,5]. Whilst there are barriers to this, Moody *et al.* [2] have demonstrated that fertility preservation can be achieved within one week of referral in an optimised setting.

Although a link between RIO and reduced sperm counts have been reported, we could not find a causal relationship between expedited RIO and compromised fertility [2], or provide specific data to help define a time frame to achieve both optimal oncological and fertility outcomes.

However, we have demonstrated that current recommendations for expedited RIO are not grounded in evidence which shows oncological benefit and may lead to suboptimal fertility preservation, which can further compromise fertility outcomes. In order to change current practice, there is a need for improved access to fertility assessment services and contemporary studies which demonstrate whether excellent TC outcomes can still be achieved in patients undergoing fertility preservation following a short delay in RIO.

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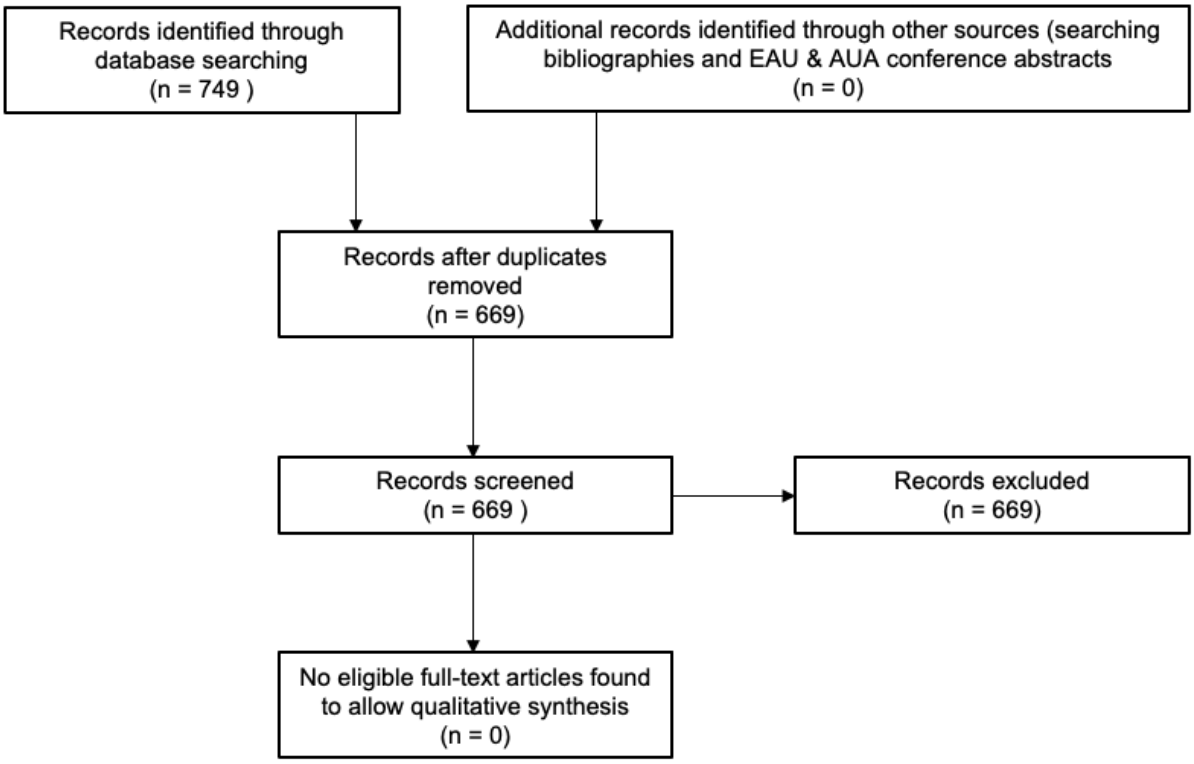

Figure 1. PRISMA flow diagram