Study of testosterone-guided androgen deprivation therapy in management of prostate cancer.


Abstract

BACKGROUND: Androgen deprivation therapy (ADT) with luteinizing hormone releasing hormone (LHRH) agonists is an effective initial therapy for men with advanced prostate cancer. LHRH agonists are usually administered indefinitely at a fixed interval.

METHODS: We recruited men with advanced prostate cancer who had been on fixed-schedule injections of an LHRH agonist for ≥1 year and had castrate serum testosterone [<1.75 nmol/l (approx. 50 ng/ml)]. Testosterone levels were measured at 6-week intervals and ADT was withheld until testosterone levels were no longer in the castrate range and then reinstituted. Time to reinstitution of ADT was the primary outcome and was analyzed by the Kaplan-Meier method; Cox regression was used to identify factors predicting delay in reinstitution of treatment. Influence on quality-of-life (QoL) was evaluated by the Expanded Prostate Index Composite (EPIC).

RESULTS: Forty-six evaluable men who had received LHRH agonist injections every 12 weeks were recruited. Median time to testosterone recovery (defined as testosterone outside the defined castrate level) after previous injection was >1 year. In univariable analysis, lower baseline testosterone [≤1 vs. >1 nmol/l (approx. 30 ng/dl)] and longer time on ADT (>5 vs. ≤5 years) predicted for prolonged time to testosterone recovery, but only lower baseline testosterone remained significant in multivariable analysis (Hazard Ratio = 5.2, P = 0.03). Overall EPIC scores remained stable but improvement from baseline was observed in the hormonal domain (P = 0.002). Median per-patient saving in cost was approximately USD 3,100 (1,050-6,200).

CONCLUSIONS: Testosterone-guided ADT reduces exposure to LHRH agonists, with reduction in cost and improvement in some symptoms from ADT. Testosterone-guided ADT should be considered an alternative to fixed schedule treatment by physicians and policy makers. Prostate 76:235-242, 2016. © 2015 Wiley Periodicals, Inc.

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KEYWORDS: LHRH; androgen deprivation therapy; prostate cancer; testosterone

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