Serotonin syndrome…

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syndrome even in the setting of therapeutic dose ranges of serotonergic drugs, and of integrating collaborative care plans from multiple teams within the hospital setting to ensure optimal patient outcomes. MM

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Primary care, the PSA test, and excess surgery: Does da Vinci robot acquisition lead to more prostatectomy?

BY SUNDUS SHAUKAT, MBBS, AND MAHAD A. MINHAS, MD, MPH

The prostate-specific antigen (PSA) is commonly ordered by primary care providers (PCPs) and may lead to unnecessary surgery, especially in the setting of new and expensive treatment modalities. The da Vinci robot has been widely adopted for radical prostatectomy (RP) after FDA approval in 2001. Prior work has associated acquisition of the robot with an increased absolute number of RPs at the state and regional level. We examined this association nationally using population-based RP rates from the Dartmouth Atlas, data which are derived from fee-for-service Medicare patients.

Methods

Publicly available age- and race-adjusted RP rate data for all 306 hospital referral regions (HRRs) of the Dartmouth Atlas were obtained for a pre-robotic period selected from 1999 to 2001 and a post-robotic period selected from 2008 to 2010. Total number of male Medicare beneficiaries in each HRR were also obtained (denominator for creating the da Vinci robot rate). Total da Vinci robot counts in each of the 306 HRRs were provided by Intuitive Surgical for 2008 only, and for each HRR, the total robot count was turned into a rate per 100,000 male Medicare beneficiaries. The HRR RP rate change was created by subtracting pre- and post-robotic RP rates. The HRR da Vinci robot rate change was created by using the 2008 da Vinci robot rate with an assumption that the pre-robotic rate was 0. HRRs with fewer than 26,783 male Medicare beneficiaries (50th percentile) were excluded to eliminate unstable or suppressed RP rates. Simple linear regression was used to assess association between the two variables. Two sensitivity analyses were done and excluded HRRs with a population less than 49,735 (75th percentile) and 86,605 (90th percentile). Confounders such as urologist supply and disease burden were not addressed in this study.

Results

From 1999 to 2010, the national RP rate per 100,000 male Medicare beneficiaries declined from 1.64 to 1.32. A total of 222 (72.5%) HRRs had at least one robot in 2008. Of 306 HRRs, 153 were excluded due to suppressed or unstable RP rates. A total of 153, 76, and 30 HRRs had more than 26,783, 49,735, and 86,506 males, respectively. No association was found between RP rate change and the da Vinci robot rate change among 153 HRRs ($r^2 < .012$, $b1 < 1.4$, $p = .18$) and 76 HRRs ($r^2 < .007$, $b1 < .94$, $p = .48$). However, among 30 HRRs, for every 1 per 100,000 increase in the da Vinci robot, 4.9 per 100,000 more RPs were done in the post-robotic period compared to the pre-robotic period ($r^2 < .15$, $b1 < 4.9$, $p = .03$).

Conclusion

Acquisition of the da Vinci robot did not appear to increase the utilization of RP within HRRs with a male Medicare population between 26,783 to 85,605 (123 HRRs). However, in the 30 most densely populated HRRs (population size >85,605), including Minneapolis, robot acquisition was associated with increased RP rates in the post-robotic era. PCPs in these 30 HRRs should be mindful of these findings when ordering a PSA test. MM

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