

**Cognitive Impairment in Men Treated with Luteinizing Hormone-releasing Hormone Agonists for Prostate Cancer:  
A Controlled Comparison**

Jim HSL, Small BJ, Patterson S, et al. *Support Care Cancer* 2010; 18:21-27.

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Received during: Journal Club (20<sup>th</sup> April 2010)  
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**Abstract:**

**GOALS OF WORK:** Data suggest that treatment with luteinizing hormone-releasing hormone (LHRH) agonists may be associated with reduced cognitive functioning. The purpose of the current study was to compare rates of clinically significant cognitive impairment in men treated with LHRH agonists to a matched sample of healthy men without cancer. **MATERIALS AND METHODS:** Participants were 48 men receiving LHRH agonist therapy for prostate cancer and 48 men with no history of cancer matched to patients on age and education. Participants were administered a battery of neuropsychological tests assessing the domains of verbal memory, verbal fluency, visuospatial memory, visuospatial abilities, and executive function. Clinically significant impairment on individual tests was defined as -1.5 SD below the normative mean; overall impairment was defined as impaired performance on two or more tests. **MAIN RESULTS:** Patients did not differ from comparison subjects in age, ethnicity, race, education, or annual household income ( $p$ 's > 0.05). No statistically significant differences in test means were found. Nevertheless, patients displayed greater overall impairment in cognitive functioning than comparison subjects (42% of patients versus 19% of comparison subjects,  $p$  < 0.05). Among patients, prior prostatectomy was associated with impaired immediate and delayed verbal memory ( $p$ 's < 0.05). **CONCLUSIONS:** Current findings suggest that LHRH agonists and surgery for prostate cancer are associated with clinically significant impairment in cognitive functioning. Longitudinal studies are needed to examine changes in cognitive impairment before and after surgical and hormonal treatment for prostate cancer. Patients undergoing LHRH agonist therapy should be monitored for cognitive changes while on treatment.

**Comments:**

**Strengths/uniqueness:**

This report provides a good summary of previous research literature used to improve the design of this study. There is a good comparison of this study's research results to other findings in the population being studied.

**Weakness:**

The lack of a longitudinal study design does not exclude the possibility of pre-existing cognitive impairment due to other factors prior to being exposed to the LHRH therapy. Comparison of testosterone levels would also be helpful to exclude this potentially important variable.

**Relevance to Palliative Care:**

This manuscript highlights the need to be aware of the sometimes subtle unrecognized underlying cognitive impairment that may limit tolerance to pharmacological management of

symptoms due to advanced cancer, and worsen cognition resulting in the development of a superimposed delirium. There is increasing literature on the cognitive changes patients may experience while being exposed to chronic oncological management through the trajectory of their disease.