Reviewer's report

**Title:** Effects of Androgen Deprivation on Brain Function in Prostate Cancer Patients - A Prospective Observational Cohort Analysis

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**Reviewer:** Yoshitomo Chihara

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Chao and colleagues have examined influence of androgen deprivation therapy (ADT) on cognition, by the combined neuropsychological testing with functional magnetic resonance imaging (fMRI). Prostate cancer patients are usually over-sixties, ADT effects on cognition are very important and potentially interesting. This study provided new information on this matter.

Minor criticisms:

1. The authors should provide information concerning,
   1) The grading and staging systems used for prostate cancer should be mentioned. (table1)
   2) The image of the control patients should be shown. (figure3)

2. In the introduction section, the authors mentioned the deactivation in the left middle dorsolateral prefrontal cortex and premotor cortex in breast cancer patients who underwent chemotherapy. However, this study showed ADT decreases activation of medial prefrontal cortex (MPCF) and connection to dorsolateral prefrontal cortex (DLFPC). In the discussion section, the authors should refer to the difference of deactivated lesion between ADT and chemotherapy of breast cancer in women, especially in MPCF and DLFPC.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.