**Poster 188: Is Hormone Replacing Therapy Associated with Reduced Risk of Adhesive Capsulitis in Menopausal Women? A Single Center Analysis**

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**Objectives:** The purpose of this study was to determine if hormone replacing therapy (HRT) is protective against adhesive capsulitis in menopausal women. We hypothesized that patients undergoing HRT will have a lower incidence of AC as compared to those without HRT.

**Methods:** A single institution electronic medical record system was queried to retrospectively review menopausal women between the ages of 45 and 60. Subjects included were those enrolled in a single healthcare system coverage model to minimize inaccessibility to external episodes of care. Only data in existence as of November 1st 2018 was reviewed. Patients were identified using ICD-9 and 10 codes for shoulder pain, shoulder stiffness and AC. A REDCap database was then built, allowing the authors to review medical records and verify the variables and diagnoses. The diagnosis of AC on chart review was confirmed by a sports medicine fellowship-trained orthopaedic surgeon and shoulder-specialized physical therapist. Patients identified with AC were further reviewed for rotator cuff tears, if corticosteroid injections were received, and lastly if surgery was required. Both groups were assessed for associated endocrine disorders. Odds ratio for diagnosis of AC was determined for subjects with and without HRT using a logistic regression analysis. All statistical analysis were conducted in SAS 9.4 (Cary, NC). Statistical significance was assessed at $p< 0.05$.

**Results:** A total of 1,952 patients were included in the study, with 152 patients receiving HRT. The distribution of thyroid disorder and diabetes were similar between the two groups with no statistically significant difference. In the HRT cohort 11.2% were identified with thyroid disorder and 9.2% with diabetes; in the no HRT 12.4% were identified with a thyroid disorder and 14.3% with diabetes. Additionally, 4.0% of patients with HRT and 7.7% of those without HRT had AC. Those not receiving HRT had 99% greater odds of adhesive capsulitis compared to those receiving HRT; however, this association did not reach statistical significance (OR: 1.99; 95% CI 0.86, 4.58; $p = 0.11$).

**Conclusions:** This is the first known study to evaluate the role of HRT in the development of AC amongst menopausal women in a single center. We concluded from our preliminary study that women not receiving HRT had greater odds of AC, however the study is limited by the available sample size. While the analysis is underpowered, the 95% confidence interval for the odds ratio contains values that support the hypothesis that HRT may be protective against AC. This preliminary data will serve as a basis for larger multi-center and prospective studies to further evaluation this association.

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