Characteristics and Co-morbidities of Patients with Movement Disorders and Melanoma
Eugene C. Lai, MD, PhD1,2 and Suzanne Moore, BA1
1Michael E. DeBakey Veterans Affairs Medical Center, Parkinson’s Disease Research, Education and Clinical Center, 2Baylor College of Medicine, Houston, Texas

Objective: To use a regional data warehouse and electronic medical record (EMR) to learn more about the co-occurrence of movement disorders with melanoma among patients seen at Department of Veterans Affairs Medical Centers.

Results: Of 153,957 patients seen at the Houston area VA during the 11 years, 48 patients had both a movement disorder and melanoma: 24 with PD, 1 PD, 9 Essential Tremor (ET), and 6 Essential tremor. All 48 were white and all but one were men. Of the PD patients, two-thirds had PD diagnosed before melanoma. Skin cancers were the most common other cancer co-morbidities, occurring in 24 of 48 patients, followed by prostate cancer in 6 patients. Based on the range of body weights in the EMR, 50% were obese at some time, 40% overweight and 10% remained at normal weight.

Conclusions/Relevance: PD-melanoma occurred with greater frequency compared to other movement disorder-melanoma combinations. The use of the Data Warehouse/EMR allows location and characterization of movement disorder-melanoma cases. Additional data from the other participating centers will be used to further characterize this patient population.

183,957 patients seen 10/01/1996 – 9/30/2007

4,802 139 1,843

ICD-9 CM Code Search

1,843 patients with melanoma
4,941 patients with movement disorder codes
4,802 patients with movement disorder codes
1,832 patients with melanoma codes

Charts were reviewed for 139 patients who had ICD-9 CM codes for both a movement disorder and melanoma

ICD-9 codes included in the Data Warehouse search:
Movement Disorders: Parkinson’s Disease (332.0), Secondary Parkinsonism (332.1), Basal Ganglia Disorders (333.0), Essential Tremor (333.1) and Tremor (781.0)
Melanoma: Melanoma (172.x) and Personal History of Malignant Melanoma (V10.82)

Melanoma evidence in medical record

No

Evelation of history of melanoma

Other forms of skin cancer

Total

Systematic miscoding early in the conversion to EMR, and since corrected, necessitates additional information beyond the use of ICD-9 codes alone (linkage with pharmacy data, chart review, or text word searches).

Diagnoses of both a movement disorder and malignant melanoma

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Movement disorder diagnosed before melanoma</td>
<td>163/24 (66.7%)</td>
</tr>
<tr>
<td>History of smoking current or past</td>
<td>163/24 (66.7%)</td>
</tr>
<tr>
<td>Overweight or obese</td>
<td>21/24 (87.5%)</td>
</tr>
<tr>
<td>BMI</td>
<td>35 (13.3%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>8/6 (66.7%)</td>
</tr>
<tr>
<td>Cancer cases not dealing with skin cancer</td>
<td>3/9 (33.3%)</td>
</tr>
</tbody>
</table>

This study expands an earlier study to add an additional year of data plus additional ICD-9 codes. Previously, we noted a high percentage of diabetes and increased BMI among the cases of PD-MM seen at our medical center.

Although the number of patients is small, we also see a high amount of diabetes and obesity among other movement disorder patients with melanoma. There were no significant differences between the groups in height, weight or BMI.

There was a similar amount of smoking history among the patients. The types of cancer cases co-occurring with the movement disorders and melanoma may reflect the smoking history of this particular veteran population.

For initial diagnosis, PD preceded melanoma in 2 out of 3 cases, while melanoma preceded in 2 of 3 of the non-PD cases.

In this small sample, 50% of the PD-MM cases were members of the Navy during their military service. Navy veterans are estimated to be 25% of the US total veteran population.

As IRB approval is received at each center, additional records will be reviewed and coded. As this study is expanded to other VA Medical Centers in our region, we will continue to collect this information.

Acknowledgement: This research was supported by the Department of Veteran Affairs.