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OBJECTIVE

To combine the use of an electronic medical record (EMR) and a regional data warehouse to identify and characterize a group of patients seen at any of ten Department of Veterans Affairs Medical Centers and diagnosed with both Parkinson's Disease (PD) and malignant melanoma (MM).

BACKGROUND

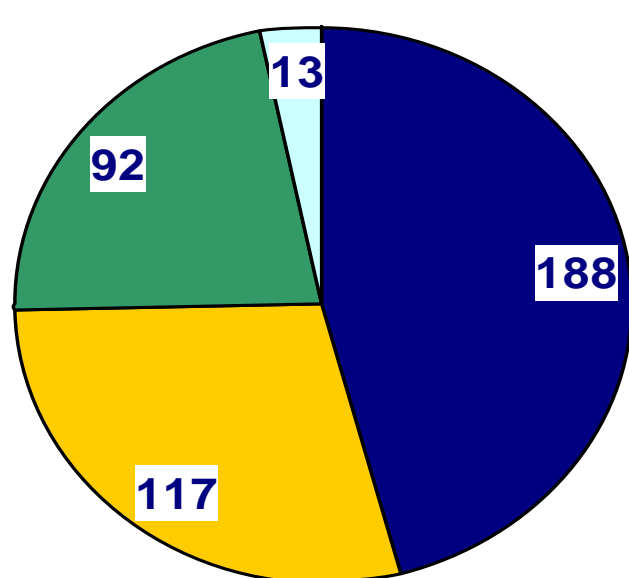
Parkinson's disease patients have been reported to be at greater risk for melanoma. The Veterans Health Administration (VHA) utilizes the same electronic medical record system nationwide. Information on patients seen at 10 regional medical centers is transmitted within the VHA to a regional electronic data warehouse. Combined use of these resources allows greater detail to be gathered on a larger number of patients than would be available from only an administrative database or one facility.

METHODS

The regional data warehouse for the eastern part of Texas, all of Arkansas, Louisiana and part of Mississippi was queried to find patients who received health care as in- or out-patients during the period 10/01/1997 09/30/2007 and who received ICD-9CM diagnostic codes for both PD/parkinsonism and melanoma. The data warehouse provided basic demographic information along with prescription drug use. Use of the electronic medical record supplemented the data warehouse information by providing additional diagnostic information, as well as information on military service, weight, smoking history, comorbidities and pathology.

RESULTS

Figure 1: In-patient and out-patient records were searched for patients with dual diagnostic codes for movement disorders and melanoma. Of 410, 188 had PD and MM ICD-9 CM codes

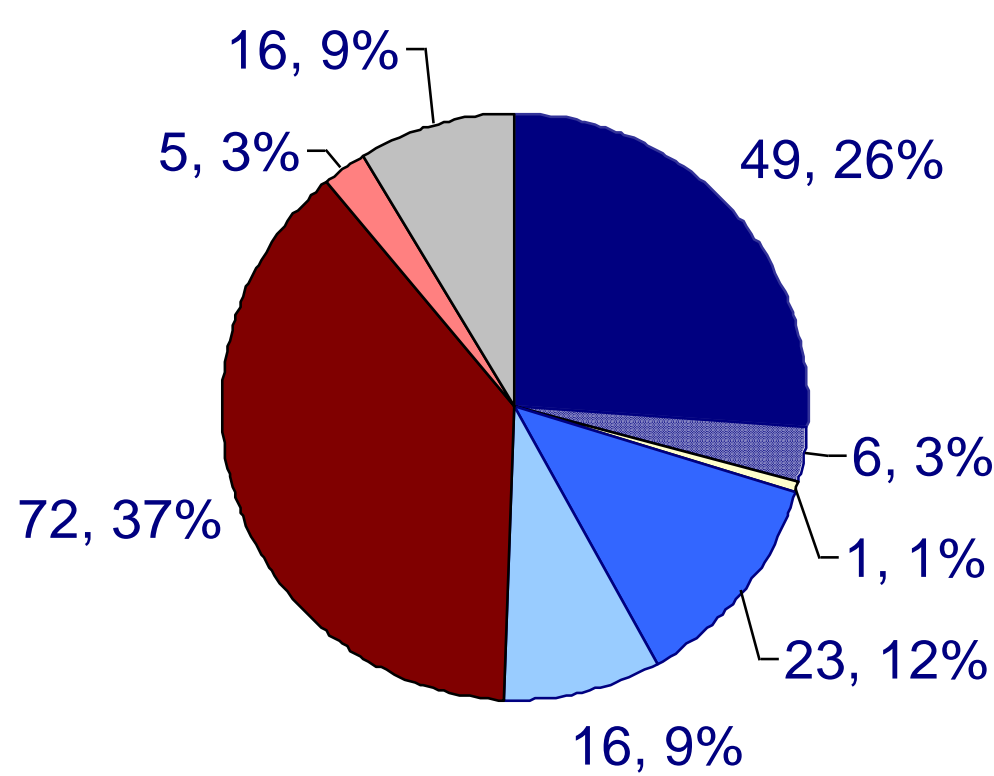


- Parkinson's Disease/Parkinsonism - 332.0/332.1
- Essential Tremor - 333.1
- Tremor - 781.0
- Basal Ganglia Disorders - 333.0

Table 1: Distribution of patients by VA site with the number of charts reviewed and results

VA Site	ICD codes for both	EMR evidence of both	Definite dx of both	Def dx of both including drug-induced
Alexandria, LA	9	2	2	2
Biloxi, MS	22	9	4	5
Fayetteville, AR	11	8	2	2
Houston, TX	50	21	16	17
Jackson, MS	17	11	7	7
Little Rock, AR	22	16	6	7
Muskogee, OK	5	5	1	1
New Orleans, LA	5	4	2	2
Oklahoma City, OK	33	14	6	9
Shreveport, LA	14	5	3	3
Region Total	188	95	49	55

Figure 2: Results from chart review of the 188 patients with dual diagnoses of PD and MM



- Both PD and MM confirmed within the electronic medical record
- Drug-induced parkinsonism and melanoma
- Parkinson's Plus and melanoma
- Both PD and MM, but with either probably PD or MM by hx only
- Both PD and MM mentioned, but with little evidence for one or both
- Single diagnosis of either PD or MM, but not both
- Single diagnosis of either drug-induced parkinsonism or MM, but not both
- Neither diagnosis confirmed in medical record

Figure 3: Common co-morbidities within the group of 55 patients with confirmed dual diagnoses of PD and MM, percentage of the 55 patients with each condition

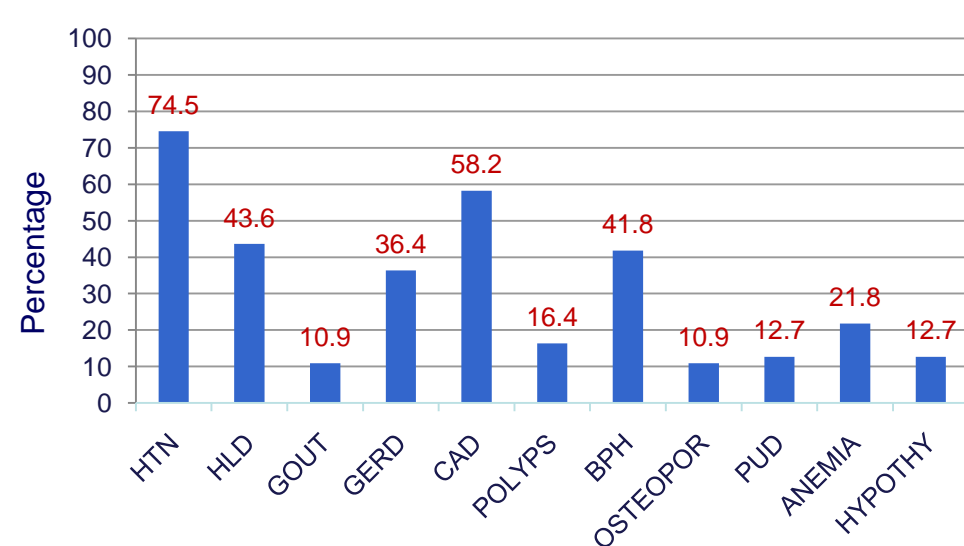


Table 2: Demographic distribution of 55 patients with confirmation of both diagnoses in the electronic medical record (EMR)

Demographics	N (%)
Smoking	
Current	5 (9.1%)
Former or Never	48 (2.2%)
Unknown	1 (1.8%)
Smokeless	1 (1.8%)
Total	55 (100%)
Military Service Era	
Vietnam	12 (21.8%)
Korean	10 (18.2%)
World War II	30 (54.5%)
Multiple Eras	3 (5.5%)
Body Mass Index	
Highest	
Normal	13 (23.6%)
Overweight	15 (27.3%)
Obese	27 (49.1%)
Residence	
Rural	26 (47.3%)
Urban	29 (52.7%)
Side of melanoma	
Left	23 (41.8%)
Right	22 (40.0%)
Unknown	8 (14.7%)
Both	1 (1.8%)
Skin Cancer	
Other (BCC, SCC)	35 (63.6%)
Melanoma alone	20 (36.4%)
Melanoma	
MMIS	19 (34.5%)
Clark II	10 (18.2%)
Clark III	6 (10.9%)
Clark IV	6 (10.9%)
Eye	3 (5.5%)
Unknown	11 (20.0%)
Incident cases	
Yes	30 (54.5%)
No	24 (43.6%)
Unknown	1 (1.8%)

RESULTS

Of 410 patients with at least one code for Parkinson's disease (PD), Parkinson's plus syndrome, or tremor plus at least one code for melanoma or history of melanoma (MM), 188 patients had codes for PD and MM. Of these 188, 99% were men, 97% Caucasian, and 55% resided in rural areas. This compares with 37.8% of VHA enrollees overall who reside in rural areas. Patients resided, on average, about 48 miles from the nearest VA medical center. PD patients whose medical records did not contain evidence of melanoma generally did show a history of other skin cancer (31 of 37, 83.8%). Characteristics and risks for combined PD/MM cases will be presented.

CONCLUSION

Combined use of data warehouse and electronic medical record resources can be successfully utilized to identify and characterize PD/MM cases. Future work will involve review of a set of records from the remainder of charts from Figure 1 to gain a more accurate estimate of the true incidence and prevalence of the co-occurrence of PD and melanoma in this population of veterans.

