

PPMI Data Analyses

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OVERVIEW

Source of data for this presentation:

- All data comes from a data freeze based on data obtained from the LONI website on 04/02/12

PLANNED ANALYSES

Planned Analysis #1: Comparison of Baseline Characteristics Among Health Subjects and PD Subjects.

- Continuous variables assessed using t-test
- Dichotomous variables assessed using chi-square test
- Appropriate assumptions will be assessed for each comparison and any necessary adjustments (i.e., transformations) will be made prior to analysis



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PLANNED ANALYSES

Planned Analysis #2: Comparison of Short-Term Change in Progression Endpoints.

- Examine short-term change during first six months for each progression endpoint using mixed model (continuous endpoints) or logistic regression (dichotomous endpoints)
- Initial model will include all baseline characteristics, indicator for whether healthy control or PD patient, and all possible two-way interactions
- Will utilize backwards selection to build a model for each progression endpoint



PLANNED ANALYSES

Planned Analysis #3: Examination of Whether Short-Term Change in Progression Endpoints is Predictive of Change in Long-Term Endpoints

- Consider only progression endpoints that show differences between healthy subjects and PD patients
- Primary focus on long-term change in UPDRS score – additional long-term endpoints may be considered as well
- Ten-fold cross-validation procedure will be used to test predictive validity of each model
- If successful, final model will provide subset of short-term progression endpoints predictive of change in long-term endpoints – suggest biomarkers for future studies of interventions in PD patient populations



PLANNED ANALYSES

Planned Analysis #4: Examination of PD Subsets

- Each of first three sets of analyses will be repeated comparing subsets of PD patients
- If successful, final model will determine whether some short-term progression endpoints are more predictive of long-term endpoints for some subsets of PD patients and less predictive for other subsets



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PLANNED ANALYSES

Planned Analysis #5: Proportion of SWEDD subjects that have a change in diagnosis over 24 month evaluation period

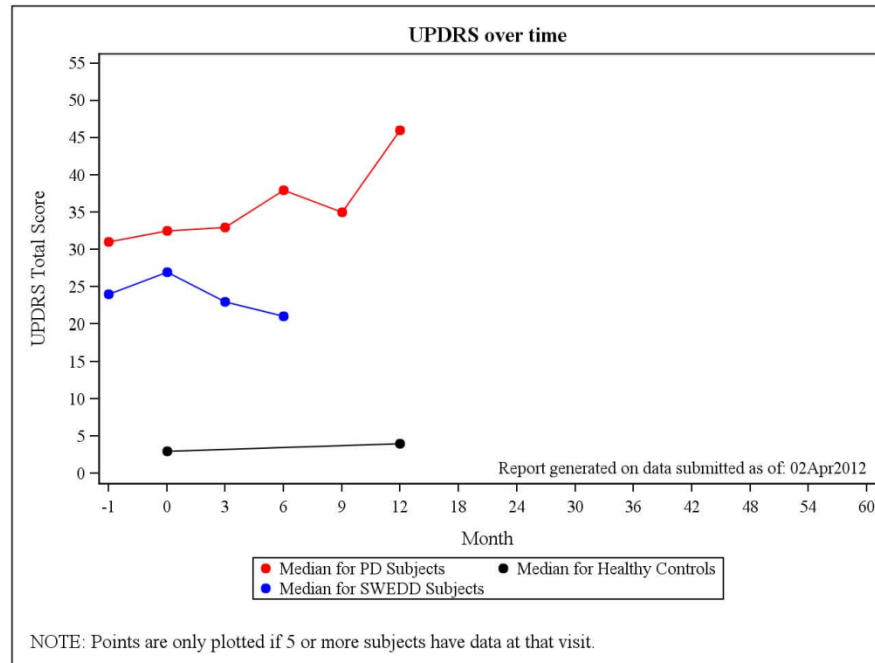
- Percentage and 95% confidence interval will be reported
- Other possible diagnoses will be further divided into 2 categories:
 - Other parkinsonian syndrome with a dopamine transporter deficit
 - Other condition with a dopamine transporter deficit

PLANNED ANALYSES

Planned Analysis #6: Exploratory analysis of SWEDD subjects

- Important changes over time found in planned analyses 1-3 will be assessed in the SWEDD subjects
- Will help to assess whether changes over time in SWEDD subjects are similar or dissimilar to PD subjects

UPDRS OVER TIME

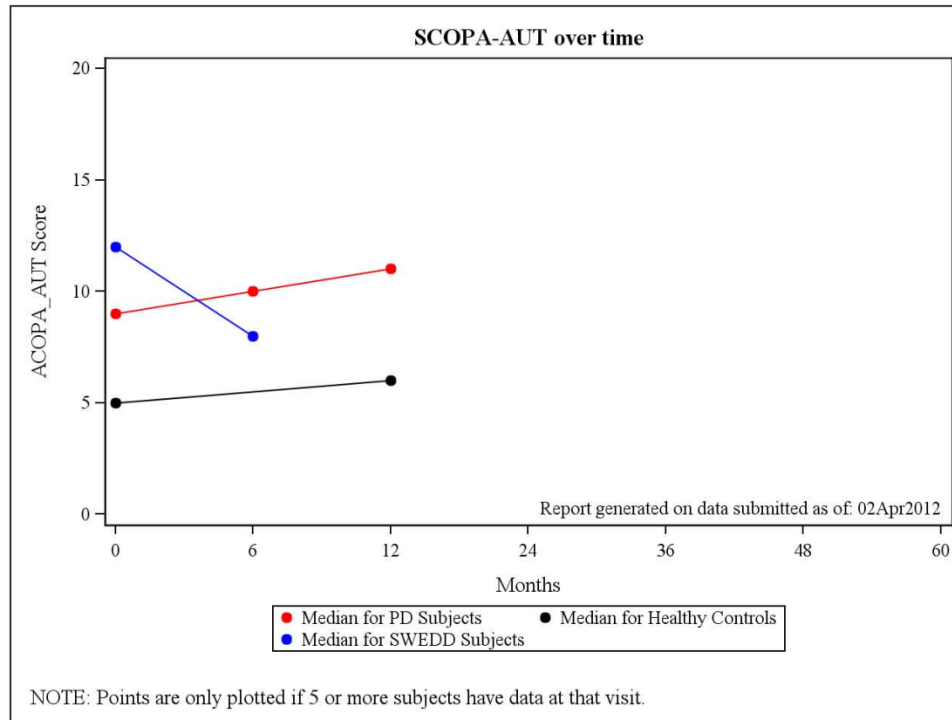


Group	Baseline Median (N) (Min, Max)	Month 3 Median (N) (Min, Max)	Month 6 Median (N) (Min, Max)	Month 9 Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	32.5 (188) (7, 72)	33 (140) (7, 72)	38 (112) (9, 94)	35 (54) (9, 63)	46 (50) (13, 84)
HC	3 (147) (0, 20)	N/A	N/A	N/A	4 (27) (1, 14)
SWEDD	27 (25) (7, 64)	23 (11) (6, 57)	21 (5) (13, 40)	13 (3) (12, 21)	17 (3) (15, 37)



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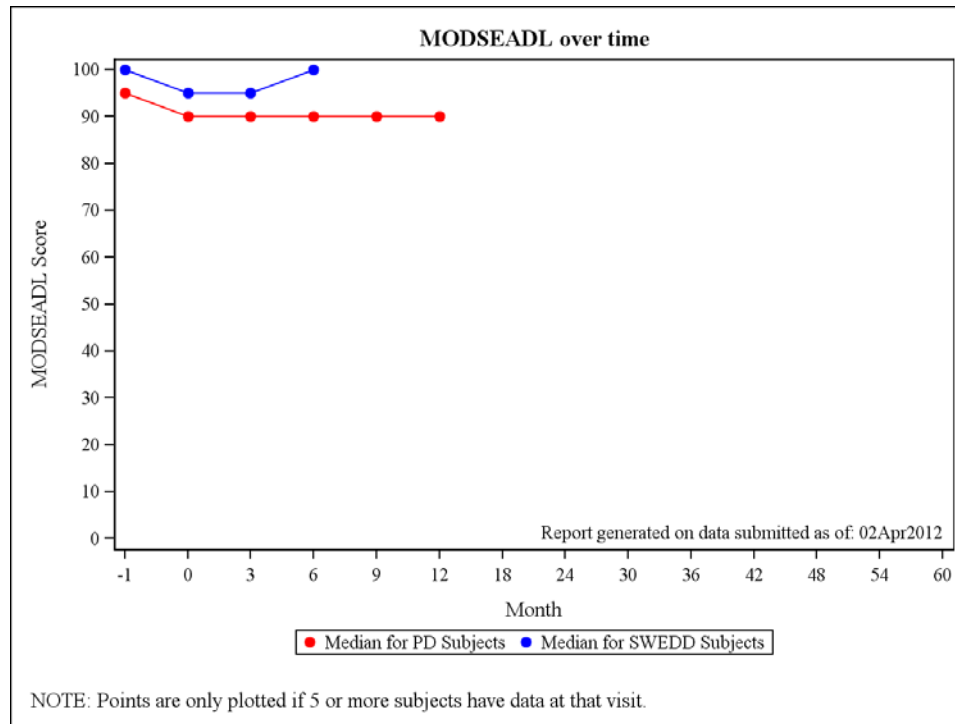
SCOPA-AUT OVER TIME



Group	Baseline Median (N) (Min, Max)	Month 6 Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	9.0 (188) (0, 39)	10.0 (80) (0, 26)	11.0 (37) (2, 30)
HC	5.0 (147) (0, 20)	N/A	6.1 (27) (0, 21)
SWEDD	12.0 (25) (2, 30)	8.0 (5) (6, 20)	9.0 (3) (7, 22)



MODSEADL OVER TIME

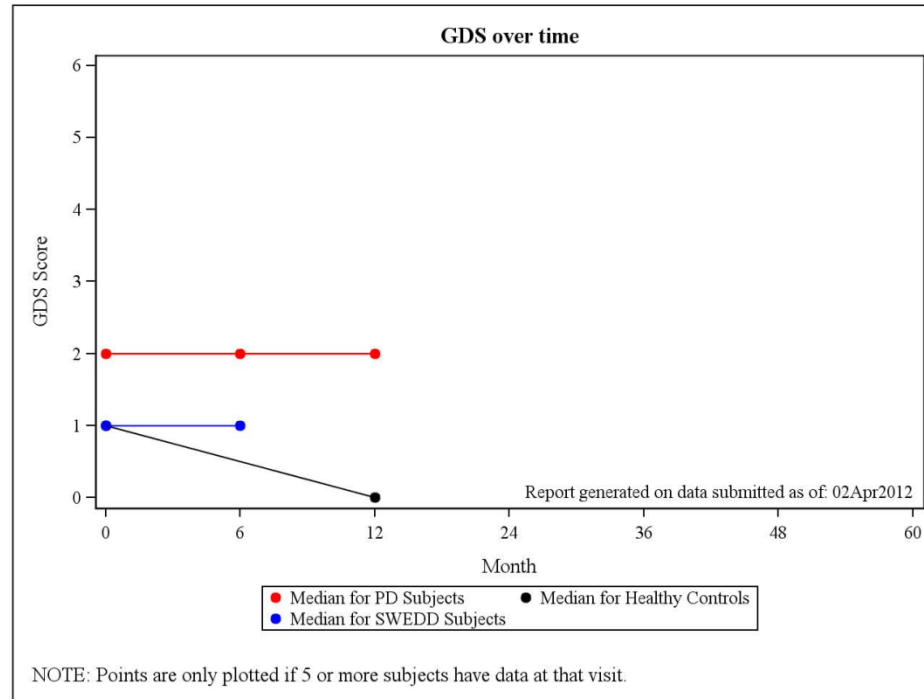


Group	Baseline Median (N) (Min, Max)	Month 3 Median (N) (Min, Max)	Month 6 Median (N) (Min, Max)	Month 9 Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	90 (188) (80, 100)	90 (143) (75, 100)	90 (106) (70, 100)	90 (55) (70, 100)	90 (38) (70, 100)
SWEDD	95 (25) (80, 100)	95 (11) (80, 100)	100 (5) (90, 100)	100 (3) (90, 100)	100 (3) (90, 100)



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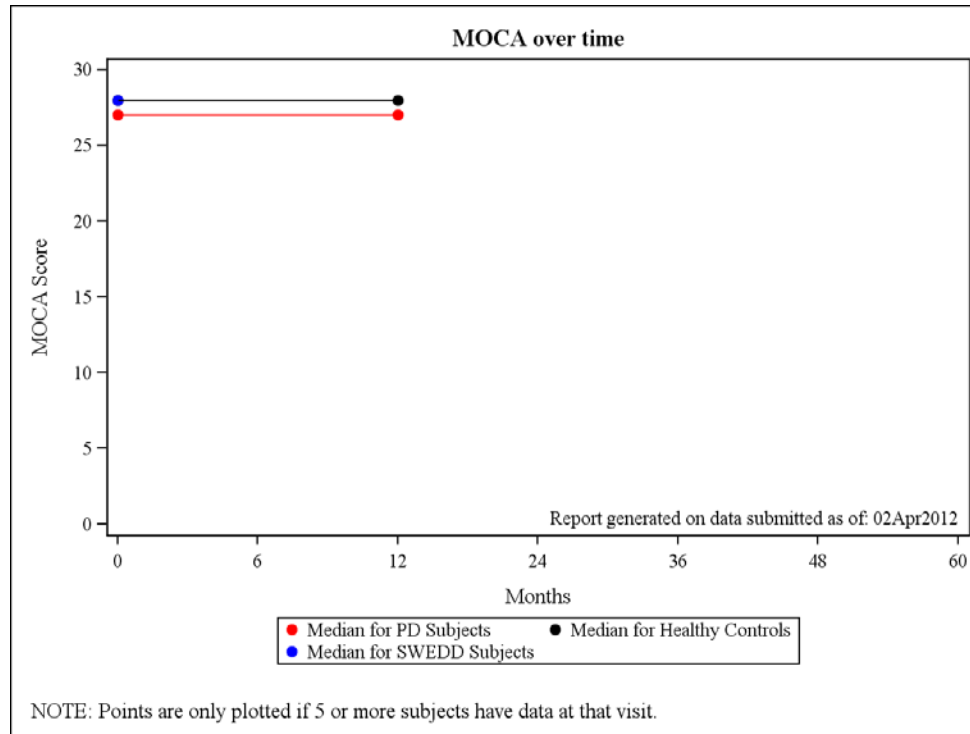
GDS OVER TIME



Group	Baseline Median (N) (Min, Max)	Month 6 Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	2 (188) (0, 13)	2 (114) (0, 10)	2 (38) (0, 10)
HC	1 (147) (0, 15)	N/A	0 (27) (0, 4)
SWEDD	1 (25) (0, 14)	1 (5) (0, 4)	2 (3) (0, 3)

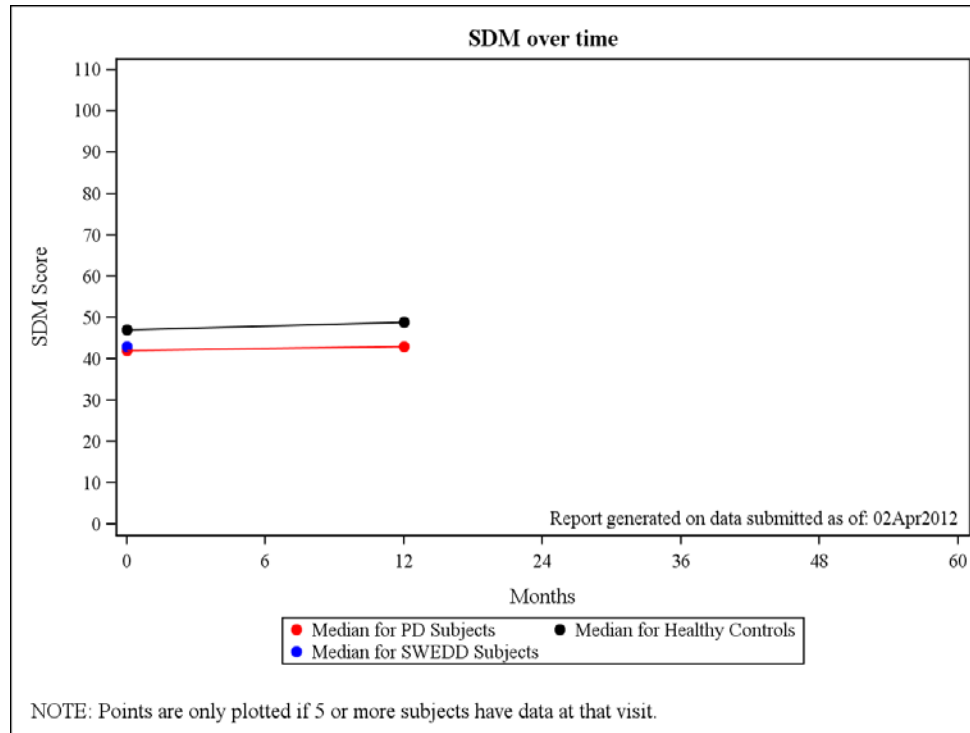


MOCA OVER TIME



Group	Baseline Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	26.95 (190) (20, 30)	26.95 (37) (19, 30)
HC	28.05 (147) (27, 30)	28.05 (27) (24, 30)
SWEDD	28.05 (25) (23, 30)	28.05 (3) (24, 28)

SDM OVER TIME



Group	Baseline Median (N) (Min, Max)	Month 12 Median (N) (Min, Max)
PD	42.0 (188) (16, 76)	43.0 (37) (17, 59)
HC	47.0 (147) (20, 83)	49.0 (27) (27, 79)
SWEDD	43.0 (25) (19, 71)	50.1 (3) (46, 57)



PLANNED ANALYSES

- Encourage data investigation/mining – know the data
- Propose analyses to working groups, Stats, SC
- What can be done now
 - Correlations of baseline data
 - Study design and assessment question
 - LP
 - Recruitment
 - MDS-UPDRS correlations with non-motor



FUTURE ANALYSES

?????



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