TELEPHONE ADMINISTRATION OF THE CDR - EXCELLENT AGREEMENT WITH FACE-TO-FACE ADMINISTRATION

BACKGROUND

- Large intra-subject variability is common in measures of neurocognition.
- CDR is interview-based; it can be administered by telephone.
- Remote administration allows raters to be independent, blinded, and calibrated.
- A smaller centralized cohort of raters can minimize variability and increase interrater reliability.

OBJECTIVES

- Conduct non-interventional methodologic study.
- Assess the feasibility of remote telephone administration to subjects with cognitive impairment and their informants of:
  - The Clinical Dementia Rating (CDR).¹
  - The Alzheimer’s Disease Cooperative Study Activities of Daily Living (ADCS-ADL).¹
  - Functional Assessment Questionnaire (FAQ).²
- Assess whether assessments conducted via telephone are equivalent to assessments conducted face-to-face:
  - For CDR – assessments of subjects with mild cognitive impairment (MCI) and mild/moderate Alzheimer’s disease (AD).
  - For CDR, ADCS-ADL and FAQ – assessments with informants.

STUDY DESIGN

Subjects were screened for inclusion/exclusion criteria and level of cognitive impairment. If eligible for the study, they and their informants were consented and scheduled. Each subject and informant was interviewed twice during the study, once by each of two different Central Raters (test and retest). Each interview included the CDR, ADCS-ADL, and FAQ with the informant, followed by the CDR with the subject. The second interview (retest) was completed within 2 – 14 days, was administered by a different clinician, and again included the CDR, ADCS-ADL, and FAQ with the informant, followed by the CDR with the subject. One interview in each pair of interviews was conducted face-to-face and the other via telephone. Central Raters traveled to the study sites to conduct the face-to-face interviews; the order of methodologies (face-to-face vs. telephone) was counterbalanced.

Subjects (N=60)

- 31 subjects diagnosed at screening with MCI.²
- 29 subjects diagnosed at screening with mild/moderate AD.
- Subjects diagnosed with mild/moderate AD had Mini-Mental State Examination (MMSE)³ scores between 16 and 25.
- Subjects ranged in age from 61 to 92 years (M±SD), with 42 percent female.
- An informant for each subject (e.g., spouse, partner, other caregiver).
- Informants were primarily spouses (73 percent) or children (16 percent), averaging 6.5 days per week contact with the subject and an average of 12.7 hours of daily contact.

Raters (N=6)

- Central Raters from MedAvante, Inc.
  - All trained and calibrated to each other before study began.
  - Raters traveled to sites to conduct face-to-face interviews.

Methods

- Order of methodologies was counterbalanced.
- Each rater conducted an equal number of interviews in each method.
- All raters were blinded to severity status.

RESULTS

The intraclass correlation coefficients (ICC) between these two methods of administration (telephone and face-to-face) are all in the very good to excellent range.⁶

Figure 1. Intraclass correlation coefficients calculated for telephone vs. face-to-face administration of the CDR Sum of Boxes, ADCS-ADL, FAQ, and CDR Global Score (n=60). Error bars are 95 percent confidence intervals. Using dependent samples t-tests, there were no statistically significant differences between any of the scores when subjects were assessed by telephone compared to face-to-face.

Figure 2. Frequency distribution of the differences in CDR Sum of Boxes scores between telephone and face-to-face administration. (+) difference indicates the face-to-face score was higher than the score via telephone; t = 0.08, p = 0.33. Average ± SD CDR-SB scores for face-to-face = 44 ± 2.7, telephone = 43 ± 2.6.

Figure 3. Frequency distribution of the differences in ADCS-ADL total scores between telephone and face-to-face administration. (+) difference indicates the face-to-face score was higher than the score via telephone; t = 6.90, p = 0.07. Average ± SD ADCS-ADL total scores for face-to-face = 68.7 ± 9.6, telephone = 67.7 ± 9.8.

Figure 4. Frequency distribution of the differences in FAQ total scores between telephone and face-to-face administration. (+) difference indicates the face-to-face score was higher than the score via telephone; t = 0.77, p = 0.44. Average ± SD FAQ total scores for face-to-face = 97 ± 9.5, telephone = 100 ± 7.64.

CONCLUSIONS

Remote central ratings conducted via telephone by well-trained and calibrated raters of the CDR Global Score, CDR Sum of Boxes, ADCS-ADL, and FAQ have excellent agreement with face-to-face administration. There were no statistically significant differences between any of these four scores when subjects were assessed by telephone compared to face-to-face, using dependent samples t-tests. Telephone administration also permits complete blinded to study visit and prior scores, eliminating potential sources of rater bias. In addition, central telephone ratings can be conducted with far fewer raters, reducing interrater variability, and potentially increase signal detection.

References

4. Cox DJ, Hug D, Zenger J. 2009. Remote central ratings conducted via telephone by well-trained and calibrated raters of the CDR Global Score, CDR Sum of Boxes, ADCS-ADL, and FAQ have excellent agreement with face-to-face administration. There were statistically significant differences between any of the scores when subjects were assessed by telephone compared to face-to-face, using dependent samples t-tests. Telephone administration also permits complete blinded to study visit and prior scores, eliminating potential sources of rater bias. In addition, central telephone ratings can be conducted with far fewer raters, reducing interrater variability, and potentially increase signal detection.