Clinical Study Report: Final

Protocol C0999T01

Title: A Multicenter, Randomized, Open Study to Evaluate the Impact of an Electronic Data Capture System on the Care of Patients with Rheumatoid Arthritis

Study Name: APART – Advanced Profiling of Antirheumatic Therapies

Phase: 4

Date First Patient Consented/Date Last Patient Completed in Reporting Period:
30 Jan 2004/13 Jul 2005

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Synopsis (C0999T01 APART)

Name of Sponsor/Company: Centocor, Inc.		
Protocol: C0999T01		
Title of the study: A Multicenter, Randomized, Open Study to Evaluate the Impact of an Electronic Data Capture System on the Care of Patients with Rheumatoid Arthritis		
Principal/Coordinating Investigator(s): Joseph Huffstutter, MD, Arthritis Associates, Chattanooga, Tennessee, US; David Yocum, MD, University of Arizona, Tucson, Arizona, US; Gregory Schimizzi, MD, Carolina Arthritis Associates, Wilmington, North Carolina, US; and Jeffrey Lisse, MD, University of Arizona, Tucson, Arizona, US.		
Study Center(s): 3 sites in the US		
Publication (reference): None		
Studied Period: 30 Jan 2004/13 Jul 2005		**Phase of Development:** 4
Objectives: The primary objective of this study was to evaluate the impact that information gathered and analyzed by an electronic data capture system (EDCS) had on patient satisfaction with arthritis care and patient-physician interactions in clinical practice. Additional exploratory objectives were as follows: 1. To evaluate the impact of an EDCS on physician therapeutic decisions and patient therapeutic outcomes. 2. To evaluate the impact that information gathered and analyzed by an EDCS had on physician-reported satisfaction with patient interactions. 3. To evaluate the effect that treatment with disease-modifying antirheumatic drugs (DMARDs) and biologic agents had on employment status, sick days, and health care utilization. 4. To evaluate the effect that medication compliance, education, and medical insurance coverage had on disease severity, disease progression, and therapeutic decisions. 5. To evaluate the safety and effectiveness of DMARDs and biologic agents in the treatment of rheumatoid arthritis (RA) in an actual clinical practice setting.		
Methodology: The study was a randomized, multicenter, observational study of the use of an EDCS. Once enrolled in the study, the patient entered information related to RA disease activity, physical function, and healthcare utilization in the EDCS at each study visit. The physician or health care provider (HCP) also entered information related to the patient's RA disease activity and prescribed therapy in the EDCS. The EDCS had the capability to generate Heath Tracker (HT) reports for physician use. During the first 6 months of the study, information entered into the EDCS was not accessible to patients or physicians in the form of a time-summarized HT report. Six months after enrollment, patients were randomly assigned in a 2:1 ratio to either the HT-user or the HT-nonuser group. After randomization, the HT reports were accessible to the physicians of patients in the HT-user group only. These reports were generated at every study visit occurring 6 to 12 months after study entry. The report was not generated for patients in the HT-nonuser group; however, physicians could acquire all of the information contained in the HT report through usual interactions with the patient during the clinic visit.		
Number of Patients (Planned and Analyzed): Enrollment was planned for 1000 patients; however, the goal was exceeded and data for 1079 enrolled patients were entered into the EDCS. Of the 901 patients who were randomized, 714 patients were in the HT-evaluable population. The number of patients in the safety-evaluable population was 1079.		
Diagnosis and Main Criteria for Inclusion: Patients 18 years of age and older with active RA according to the American College of Rheumatology criteria (ACR 1987) were eligible for enrollment.		
Duration of Study: 12 months.		
Duration of Treatment: Not applicable. No administration of study agent		

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Criteria for Evaluation:

HT-evaluable Patients

Patients who completed a baseline visit and at least 3 of the 4 follow-up visits within the visit window (every 3 months ± 6 weeks) were evaluable for efficacy and therapeutic outcomes.

Safety-evaluable Patients

Patients who completed the study procedures for at least 1 study visit were evaluable for safety.

Efficacy: Efficacy was evaluated using a patient satisfaction questionnaire and a patient-physician interaction survey. Exploratory endpoints were evaluated using the following:

1. Health Assessment Questionnaire (HAQ)
2. The Short Form-12 Health Survey Questionnaire (SF-12)
3. Patient painful and/or swollen joint counts
4. Tender joints reported by HCP
5. Swollen joints reported by HCP
6. Visual analog scale (VAS) global disease assessment by patient
7. VAS global disease assessment by HCP
8. VAS pain assessment by patient
9. VAS fatigue assessment by patient

Impact of Biologic Agent and DMARD Use on Health Economics

1. Employment and disability status
2. Sick and disrupted days
3. Questionnaire of health care utilization
4. Income

Modifiers of Disease Severity, Progression, and Therapeutic Decision Making

1. Medications
2. Medication compliance questionnaire
3. Education level
4. Medical insurance

Safety: Assessment of all adverse events.

Statistical Methods: The primary objective of this study was to evaluate the impact that information gathered and analyzed by an EDCS had on patient satisfaction with arthritis care. In addition, patient-physician interaction satisfaction was examined. Primary study endpoints; ie, patient satisfaction questionnaire and patient-physician interaction survey, were analyzed as the change between the pre- and post-randomization phases for the 2 study groups using the HT-evaluable population. The value obtained at the enrollment visit served as baseline for each parameter. Data from all randomized patients were analyzed according to their assigned study group. Descriptive and graphical methods were used to summarize the primary endpoints for both pre-randomization and post-randomization phases. Summary statistics included number of patients, mean, median, and interquartile range.

To satisfy the primary objective of this trial, the following comparisons were made:

- Patient-physician interactions (ie, responses from the patient satisfaction questionnaire and the patient-physician interaction survey) for patients in the HT-user group will be compared between the pre- and post-randomization phases of the study.
- Patient-physician interactions (as defined above) in the HT-user group during the post-randomization phase of the study will be compared with those of the HT-nonuser group during the same period.
- Patient-physician interactions (as defined above) for patients in the HT-nonuser group will be compared between the pre- and post-randomization phases of the study.

Results from the patient satisfaction and patient-physician interaction satisfaction variables were presented for each question and for the overall score with the number of observations, mean, median, and interquartile range for each group (HT-user and HT-nonuser) at each study visit (0, 3, 6, 9, and 12 months). The intragroup

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comparison was made using a paired t-test. Intergroup comparisons were made using an analysis of variance (ANOVA) based on the change of the means (ie, mean post-randomization value – mean baseline value).

SUMMARY – CONCLUSIONS

Study Population Results: A total of 1079 male and female patients with RA who were enrolled at 3 US study sites served as the safety-evaluable population. Of the 1079 patients, 901 patients were randomized in a 2:1 ratio into HT-user (N=600) and HT-nonuser (N=301) groups; these served as the HT-evaluable population. The majority of patients in the HT-evaluable population were women (71%) and Caucasian (85%). The median age was 61. The median duration of RA was 9.7 years. Overall, more than 50% of patients were noncompliant with their prescribed medication at each study visit across both study groups.

The HT-user and HT-nonuser groups were similar in the following: demographic characteristics (eg, education, income, access to medical insurance); baseline medical histories; use of DMARDs and biologic agents; and patients' and their physicians' assessment of RA characteristics (eg, tender and swollen joints, HAQ scores, etc.).

EDCS and HT Results: The results of this study suggest that the use of the EDCS and HT report had a positive effect on patient-physician interactions. This effect was generally greater among patients whose HT report was accessible to physicians. To summarize, key results are as follows:

- At the 12-month visit, HT-users were significantly more satisfied with their arthritis care than they were at their baseline visit ($p=0.0003$).
- At the 12-month visit, HT-users had improvements from baseline in satisfaction scores that reached statistical significance for all but 1 question on the patient satisfaction questionnaire. No differences were apparent for the HT-nonusers, and there were no differences between the HT-user group and the HT-nonuser group at the 9-month visit and the 12-month visit.
- Physician satisfaction improved significantly from baseline with both the HT-user group ($p<0.0001$) and the HT-nonuser group ($p=0.0020$).
- At the 12-month visit, significant differences in physician satisfaction were noted between the HT-user and HT-nonuser groups ($p=0.0008$).
- Statistically significant differences between baseline and 12 months were reached for every question on the patient-physician interaction survey for HT-users and HT-nonusers.

Safety Results: During the study, about 40% of the safety-evaluable patients experienced 1 or more AEs, however AEs were evenly distributed between the randomized patient groups with no discernible differences in incidence between HT-users (44%) and HT-nonusers (46%). In addition, the incidences in those receiving biologic agents (49%) and those receiving DMARDs (47%) were similar and there was little difference between the HT-users and HT-nonusers for either class of medication.

There were 5 deaths during the study period and 1 death shortly after the end of the study (Day 373). Of the 6 patients who died, 2 patients had been receiving infliximab and neither death was considered by the physician to be related to infliximab.

Conclusions: This open, randomized, observational study of patients diagnosed with RA provided evidence for the beneficial effects an EDCS and HT report can have in clinical practice.

- All patients had improvement in satisfaction with their arthritis care after 9 and 12 months of the study when compared with baseline.
- Patients in the HT-user group had statistically significant improvement in satisfaction with their arthritis care after 9 and 12 months of the study when compared with baseline.
- Physician satisfaction with patient interactions improved for all patients in the study between the baseline and 12-month visit.

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• Physician satisfaction with patient interactions improved more when the physicians had access to the HT report than when they did not. • There were no differences in therapeutic outcome evaluations whether or not the physicians had access to the HT report.		
Date of Report: 10 August 2006		

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