

Treatment with certolizumab pegol 400 mg improves work productivity and daily activities in patients with Crohn's disease: PRECiSE 2 data

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Background

- Crohn's disease is a chronic inflammatory disease of the gastrointestinal tract characterized by debilitating symptoms, including abdominal pain, weight loss, anemia, and persistent diarrhea. It emerges in early adulthood and has no known cure. Patients with Crohn's disease experience an ongoing cycle of remissions and unpredictable exacerbations.
- The high burden of Crohn's disease on patients' daily activities and work productivity has been documented.¹

Introduction

- Few studies have assessed the potential benefits of biologic therapy for Crohn's disease on patients' work productivity and daily activities.
- Certolizumab pegol is a PEGylated Fab' fragment of a humanized anti-tumor necrosis factor- α monoclonal antibody, which is currently being developed for the treatment of Crohn's disease and other autoimmune diseases.
- The PRECiSE (PEGylated antibody fRagment Evaluation in Crohn's dIsease: Safety and Efficacy) 2 maintenance trial assessed the efficacy and safety of certolizumab pegol 400 mg given subcutaneously (sc) every 4 weeks, compared with placebo, after open-label induction with certolizumab pegol.² Patients had moderate to severe Crohn's disease, as defined by a Crohn's Disease Activity Index (CDAI) score between 220 and 450 points, inclusive.

Aims and methods

- The aim was to evaluate the effect of certolizumab pegol on work productivity and daily activity impairment in patients with Crohn's disease during the PRECiSE 2 study.

- Patients with active Crohn's disease who demonstrated a clinical response to induction therapy with certolizumab pegol (400 mg sc administered at Weeks 0, 2, and 4) at Week 6 were subsequently randomized to receive double-blind injections of certolizumab pegol 400 mg or placebo every 4 weeks from Week 8 to 24.

- The Work Productivity and Activity Impairment questionnaire³ specific to Crohn's disease (WPAI:CD) was used to collect data on the impairment due to Crohn's disease that patients experienced during the 7 days prior to the visit, at Weeks 0, 16, and 26. The WPAI:CD, which has been validated in several diseases, comprises four dimensions and impairment scores (expressed as percentages):

— Absenteeism: hours missed from work

— Presenteeism: impairment while working

— Overall work impairment: combination of Absenteeism and Presenteeism

— Daily activities impairment: for example shopping, exercising, childcare, etc.

- The mean change in impairment score from Week 0 to Week 26 was calculated for each of the four dimensions and compared by treatment group using Student's *t* test. A higher reduction in WPAI:CD scores indicates a better outcome for the patient.

Results

- Demographic characteristics of the intention to treat (ITT) population are presented in Table 1.
- Clinical characteristics of the ITT population are presented in Table 2.

Table 1. Patients' demographic characteristics (PRECiSE 2, ITT population)

Demographic variable	Certolizumab pegol induction + placebo (n=210)	Certolizumab pegol induction + maintenance (n=215)
Mean (SD) age, years	37.6 (12.1)	37.5 (11.2)
Gender, % male	51.9	42.8
Region, %		
Eastern Europe	30.5	30.7
Western Europe	17.1	21.4
North America	29.0	22.3
Rest of the world	23.3	25.6
Smoking status		
Never	46.7	42.3
Stopped before diagnosis of CD	7.1	8.4
Stopped after diagnosis of CD	10.0	19.5
Current smoker	36.2	29.8

CD, Crohn's disease; SD, standard deviation.

Table 2. Patients' clinical characteristics (PRECiSE 2, ITT population)

Clinical variable	Certolizumab pegol induction + placebo (n=210)	Certolizumab pegol induction + maintenance (n=215)
Mean (SD) duration of CD, years	7.3 (7.8)	8.6 (7.1)
Location of CD, %		
Terminal ileum	23.3	20.9
Colon	27.1	26.0
Ileocolon	42.4	48.4
Upper gastrointestinal	7.1	4.7
Behavior of CD, %		
Inflammatory	67.1	67.4
Stricturing	9.5	11.6
Penetrating	23.3	20.9
Resection performed, % yes	34.8	29.8
Past medications for CD, % yes ^a		
Immunosuppressants	20.5	21.4
Steroids	46.7	49.3
5-ASA	34.3	34.4
Infliximab	24.3	24.2
Mean (SD) CDAI baseline score	301.1 (61.2)	305.6 (60.8)

^aIf currently not taking the medication.

5-ASA, 5-aminosalicylic acid; CD, Crohn's disease; SD, standard deviation.

- Certolizumab pegol maintenance treatment for 26 weeks improved all WPAI:CD baseline scores significantly more than open-label induction followed by placebo. The magnitude of the decrease in the active maintenance group was 2 to 7 times that of the patients receiving placebo during the maintenance phase (Figures 1 and 2).

Figure 1. Mean productivity and activity impairments at baseline and after treatment with either 3 injections of certolizumab pegol followed by placebo maintenance or certolizumab pegol maintained for 26 weeks (PRECiSE 2, ITT population).

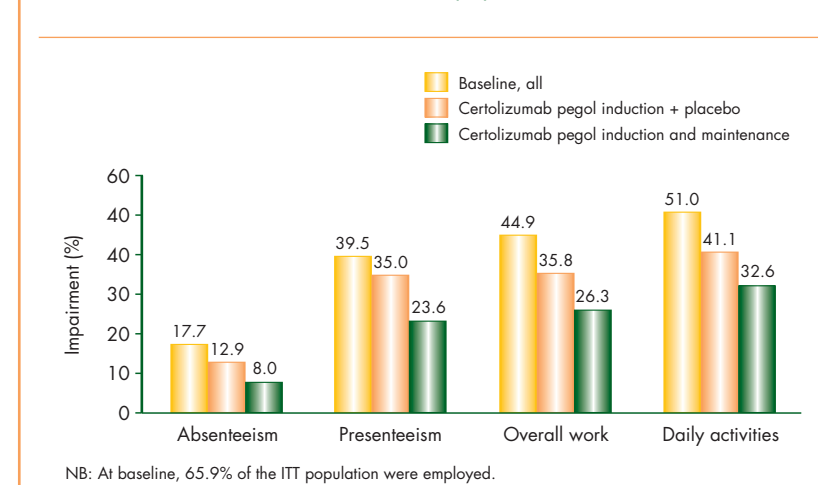
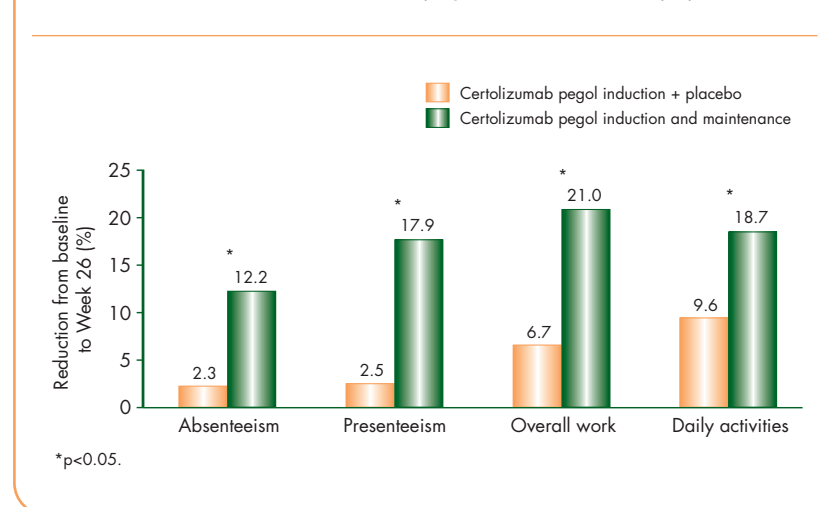


Figure 2. Mean reduction in impairment at work and in activities after 3 injections of certolizumab pegol followed by placebo maintenance versus 26 weeks of certolizumab pegol (PRECiSE 2, ITT population).



- Patients assigned to active treatment missed on average 9.9% less work time because of Crohn's disease — equivalent to 2 additional working days per month — and had 15.4% less work impairment than those who received 3 injections followed by placebo (Table 3).

Table 3. Difference in WPAI:CD score change from baseline to Week 26 (PRECiSE 2, ITT population)

WPAI:CD dimension	Sample size ^a		Mean difference (certolizumab pegol–placebo) [95% CI]	p-value
	Certolizumab pegol induction + placebo (n=210)	Certolizumab pegol induction + maintenance (n=215)		
Absenteeism	102	100	9.9 [1.0–18.9]	0.030
Presenteeism	99	101	15.4 [6.7–24.1]	<0.001
Overall work impairment	91	91	14.3 [4.6–24.1]	0.004
Daily activities	199	193	9.1 [3.0–15.3]	0.004

^aNumber of observations after last observation was carried forward. CD, Crohn's disease; CI, confidence interval; ITT, intention to treat.

Conclusions

- In the PRECiSE 2 study, certolizumab pegol maintenance therapy following open-label induction therapy improved both work productivity and the ability to carry out daily activities in patients with active Crohn's disease.
- Treatment with certolizumab pegol may result in an important reduction in absenteeism, improved workplace productivity, and improvements in patients' everyday lives.

References

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3. Reilly MC, et al. Pharmacoeconomics 1993;4:353–365.