PMS89

THE IMPACT OF ANTI-TNF (ETANERCEPT) THERAPY ON WORK PRODUCTIVITY IN PATIENTS WITH RHEUMATOID ARTHRITIS, ANKYLOSING SPONDYLITIS, PSORIATIC ARTHRITIS AND PSORIASIS IN THE CZECH REPUBLIC

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BACKGROUND

Rheumatoid arthritis (RA), ankylosing spondylitis (AS), psoriatic arthritis (PsA) and psoriasis (PS) have significant impact on patients' functional abilities and usual daily activities. They also hugely affect working ability and productivity and thus cause high productivity costs immediately after diagnosis [1]. Foreign studies show that early anti-TNFα treatment, in our case etanercept (ETN), slows down disease progression, improves overall disease burden and allows patients to return to work [2-5].

OBJECTIVES

The aim of this study was to examine the impact of etanercept therapy on work productivity in patients with RA, AS, PsA and PS who are not responding to disease-modifying antirheumatic drugs (DMARDs) in prospective real world observation in the Czech Republic. The data collection is still ongoing and this is an updated report using cut-off data from October 2015.

METHODS

Work productivity was examined in 107 working patients (whole sample 193 patients) using the Health and Work Productivity Questionnaire (HPQ) [6,7] before ETN treatment initiation and in 79 patients (whole sample 145 patients) after 3 months of the treatment. The details of a sample are summarized in flowchart (**Figure 1**). The differences in working productivity and health-related quality of life (HRQoL) were tested using Wilcoxon rank-sum test.

Productivity costs were monetized using average gross wage which is equal to €974 [8] (converted from CZK to € by exchange rate of 27 CZK/EUR [9]) and calculated using friction cost (FC) and human capital (HC) approaches [10]. When calculated by FC, we used a friction period of 6 months. If using HC, we calculated productivity costs until retirement (62 years) while applying annual discount rate of 3%. We also measured HRQoL (using the EQ-5D-3L questionnaire) and the main clinical outcomes in given diagnosis (DAS28 and HAQ in RA, BASDAI and BASFI in AS, PASI and DLQL in PS and PsA and BSA in PS).

Table 1. Baseline characteristics of the sample

Characteristic	Value
Sample n. (%)	193 (100)
Mean age in years	47.7
Sex (female) n. (%)	116 (60)
Diagnosis	
Rheumatoid arthritis n. (%)	73 (38)
Ankylosing spondylitis n. (%)	27 (14)
Psoriatic arthritis n. (%)	56 (29)
Psoriasis n. (%)	20 (10)
Psoriasis and psoriatic arthritis n. (%)	17 (9)
Clinical characteristics	
Mean time from diagnosis in years	13.6
Prior biological therapy n. (%)	108 (56)
Working status	
Full-time job n. (%)	90 (47)
Part-time job n. (%)	13 (7)
Self-employed n. (%)	10 (5)
Unemployed n. (%)	13 (7)
Disability pension n. (%)	27 (14)
Pension n. (%)	22 (11)
Maternal leave n. (%)	9 (5)
Student n. (%)	8 (4)
Household n. (%)	1 (1)
Invalidity	
No invalidity n. (%)	161 (83)
Invalidity of 1st stage n. (%)*	9 (5)
Invalidity of 2nd stage n. (%)*	9 (5)
Invalidity of 3rd stage n. (%)*	14 (7)

*Invalidity of 1st stage is defined by Law as a decrease in working productivity by 35-49%, 2nd stage by 50-69% and 3rd stage by 70-100%.

Table 2. Results of Quality of life (EQ-5D-3LD and EQ-VAS)

Diagnosis	Mean (Before treatment)	Mean (After 3 months of treatment)
EQ-5D-3L (all patients)	0.57	0.79
RA	0.54	0.77
AS	0.51	0.78
PsA	0.62	0.80
PS	0.68	0.82
EQ-VAS (all patients)	43.6	69.2
RA	38.5	63.4
AS	40.2	72.0
PsA	48.1	71.8
PS	56.5	72.0

Table 3. Results of clinical outcomes

Outcome	Mean (Before treatment)	Mean (After 3 months of treatment)
Rheumatoid arthritis		
DAS28	5.8	3.2
HAQ	1.3	0.8
Ankylosing spondylitis		
BASDAI	6.1	2.4
BASFI	5.6	2.6
Psoriatic arthritis		
PASI	14.1	6.8
DLQI	16.7	6.7
Psoriasis		
PASI	17.4	5.7
DLQI	17.3	8.1
BSA (%)	27.7	9.9

*DAS28: Disease activity score 28; HAQ: Health assessment questionnaire, BASDAI: Bath ankylosing spondylitis disease activity, BASFI: Bath ankylosing spondylitis functional index, PASI: Psoriasis area and severity index, DLQI: Dermatology quality of life index, BSA: Body surface area.

RESULTS

The baseline values of absenteeism, presenteeism and total HPQ score were 0.171, 0.738 and 0.676, respectively. Absenteeism decreased only slightly to 0.099 (p=0.120) but presenteeism and total HPQ score significantly increased to 0.897 and 0.823 (both p<0.001) after 3 months of treatment with ETN. The average productivity costs per patient were €1,867 (FC) or €42,023 (HC) at the baseline. After the three months of ETN therapy the productivity costs decreased to €1,036 (FC) or €23,376 (HC) per patient. The differences between FC and HC are substantial and therefore we are convinced that the true result lies somewhere between these two extremes.

The largest change in absenteeism was –0.146 in AS, followed by –0.063 in RA, –0.015 in PS and +0.011 in PsA. The highest increase in presenteeism had patients with RA (+0.205), then with AS (+0.142), PsA (+0.136) and PS (+0.101). The largest change in total HPQ score was +0.213 in RA, followed by AS (+0.153), PsA (+0.081) and PS (+0.068) (**Figure 1**).

Consequent changes in average productivity costs per patient were equal to –€1,218 (FC) or –€19,194 (HC) in RA, –€855 (FC) or –€26,105 (HC) in AS, –€457 (FC) or –€8,692 (HC) in PsA and –€399 (FC) and –€5,802 (HC) in PS (**Figure 2** and **3**).

These results show that although AS treatment did not result in the highest change in HPQ score, it translated into the highest reduction of productivity costs when measured by HC which is caused by generally lower age of AS patients (43 vs. 49 years old in other diagnosis). In all patients, there was also a decrease of working incapacity in the last 3 months from 6.1 to 1.5 days on average.

The 3-months ETN therapy also significantly increased the HRQoL; the average baseline EQ-5D-3L index of 0.659 increased to 0.880 (p<0.001) and EQ-VAS score of 39.5 increased to 70.9 (p<0.001). Increases of HRQoL in particular diagnosis are similar to the overall increase (**Table 2**). Finally, ETN therapy led to improvement of all important clinical outcomes in all diagnosis (**Table 3**).

Figure 1. Patient flowchart

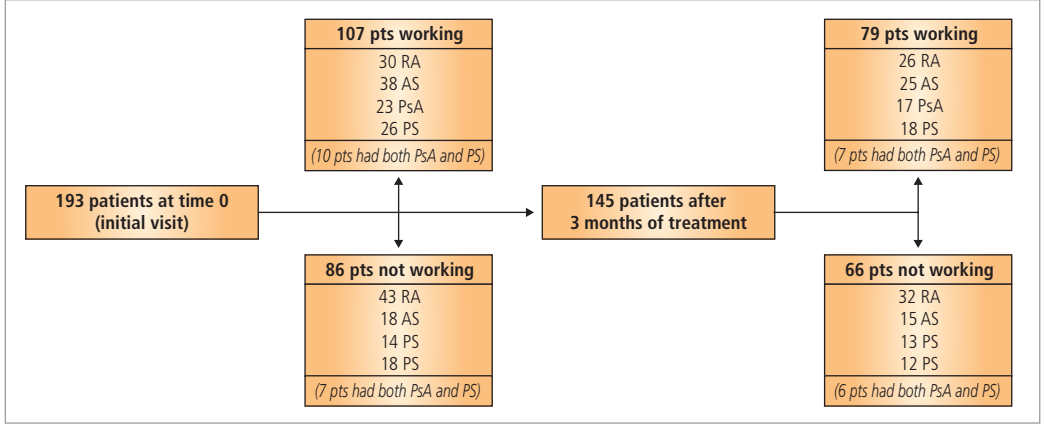


Figure 2. Working productivity measured by HPQ in given diagnosis

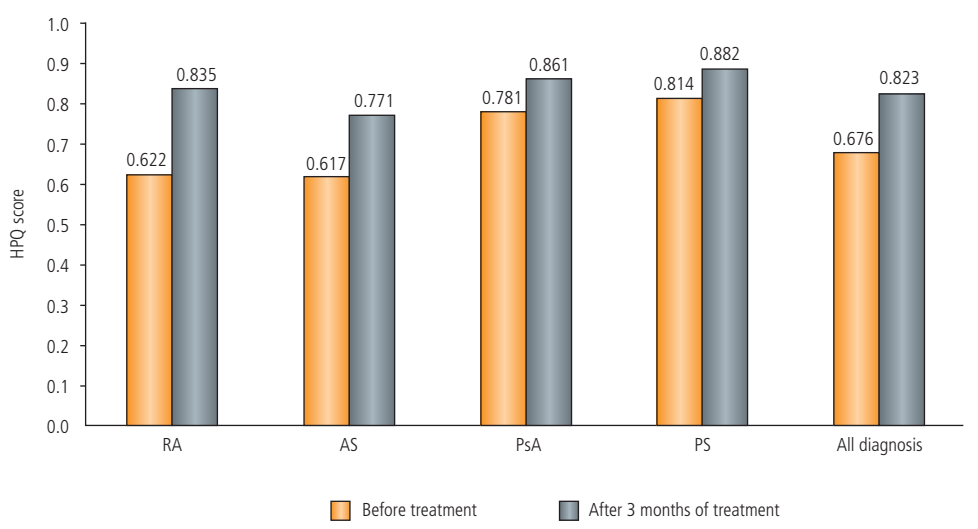


Figure 3. Productivity costs (measured by friction cost approach)

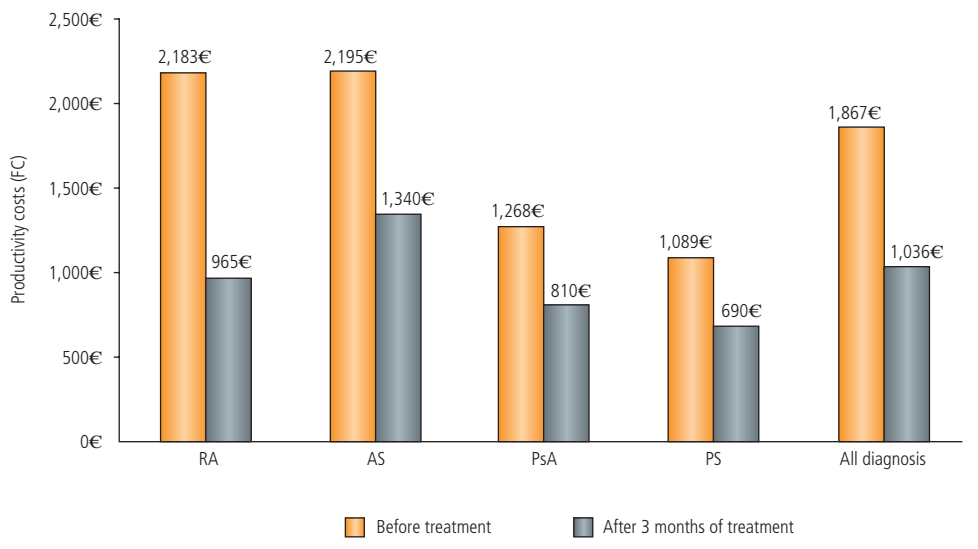
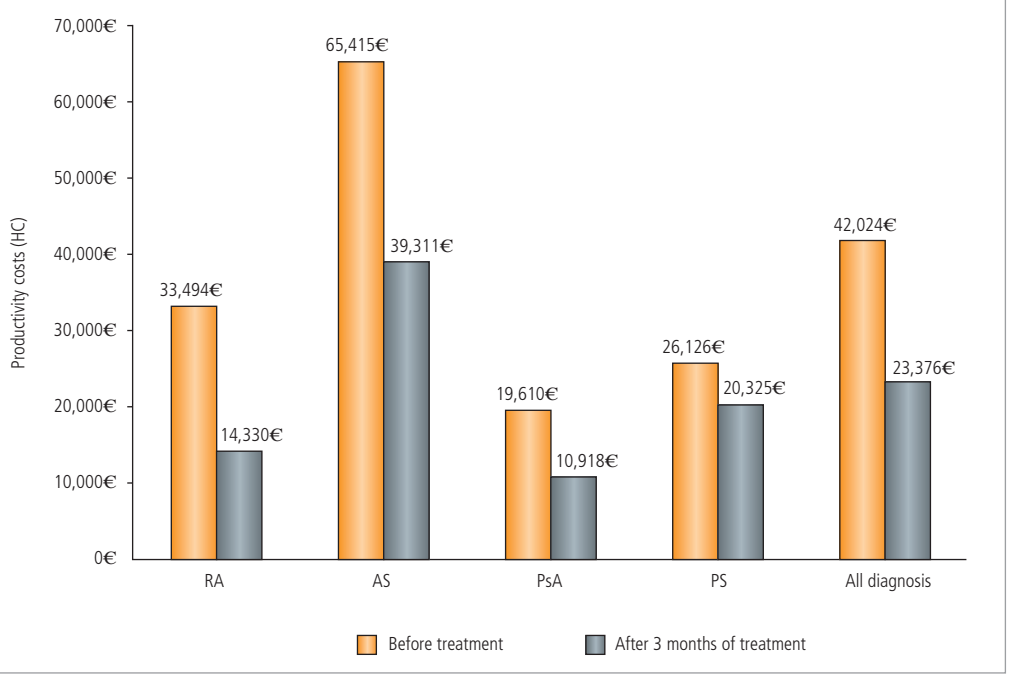


Figure 4. Productivity costs (measured by human cost approach)



CONCLUSIONS

Modern biological anti-TNF (etanercept) therapy has proved to substantially decrease the negative effect of RA, AS, PsA and PS on patients' work productivity leading to lower productivity costs and also improvement of their quality of life and the main clinical outcomes.

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