First steps to understand productivity loss in Portuguese patients with rheumatoid arthritis

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To the editor,

For patients, maintaining the ability to perform a job is an important outcome, as it reflects upon economic status and social/psychological health[1,2]. Rheumatoid Arthritis (RA), in consequence of joint inflammation and damage, is known to lead to productivity loss[3]. Developments during the 21st century, such as biologic treatments, allowed remission/low disease activity to be achieved in more RA patients. Despite this, evidence is equivocal concerning work outcomes improvement[3,4,5]. Previous authors studied monetary costs of RA in a Portuguese population[6]. However, in Portugal, no study evaluating productivity in RA with a validated questionnaire has yet been performed.

The authors performed a multicentric pilot study to evaluate work status and productivity in a Portuguese population with RA, from 3 Rheumatology Departments (Centro Hospitalar de Vila Nova de Gaia/Espinho, Centro Hospitalar e Universitário de São João and Unidade de Saúde Local do Alto Minho). To assess work productivity, the questionnaire *Work Productivity and Activity Impairment General Health* (WPAI) was applied through personal or telephonic interview, allowing the calculation of 4 productivity parameters: absenteeism, presenteeism, overall work impairment (OWI) and daily activity impairment (DAI) (values in percentage)[7,8]. Patients were also asked to complete the *Health Assessment Questionnaire* (HAQ), visual analogue scale of pain (VAS pain) and patient global assessment (VAS PGA). The study was approved by the Ethics Committee of all 3 institutions.

In this cross-sectional study, 166 individuals (77.1% female) were consecutively included, with a mean age of 53.9 years (±10.5). Nearly half the patients (45.8%) were under biologic treatment. Table 1 summarizes clinical and demographic characteristics according to work status. Less than half the patients were employed (n=73, 44.0%) – these were younger (median age of 50 years old *versus* 62 years old in the retired group and 53 years old in the unemployed not retired group), and had shorter disease duration (median 5 years *versus* 13 years in the retired group and 6 years in the unemployed not retired group). They also presented lower values of VAS pain and HAQ score, despite not statistically significant (*Kruskal-Wallis test*).

Considering work impairment, despite a low absenteeism (median 0%, mean 8.2%), OWI and presenteeism values were both considerable (median 40% and 45.8%, respectively). A positive correlation was found between WPAI parameters and other patient reported outcomes (*Spearman correlation*). VAS pain correlated with all productivity outcomes (presenteeism r_s=0.566, p<0.001; absenteeism r_s=0.253, p=0.031; OWI r_s=0.562, p<0.001; DAI r_s=0.680, p<0.001), as well as HAQ score (presenteeism r_s=0.660, p<0.001; absenteeism r_s=0.353, p=0.002; OWI r_s=0.563, p<0.001; DAI r_s=0.676, p<0.001). VAS PGA showed association with presenteeism (r_s=0.512, p<0.001), OWI (r_s=0.502, p<0.001) and DAI (r_s=0.643, p<0.001). This strengthens the validity of productivity outcomes as mirrors of RA related incapacity/damage[3].

When comparing patients with *versus* without biologic treatment, a significant difference was only observed in absenteeism (median 2.92 in the first and 0 in the last, p=0.008, *MannWhitney test*). Other studies showed a benefit in productivity in patients under biologics, namely during randomized controlled trials[3,5]. Confounding by indication (inherent to the real-life scenario of this cohort) may explain why patients under biologic treatment didn't present better work productivity: those referred to biologic have a more aggressive disease, that is harder to control. The higher absenteeism could be a mirror of intravenous biologic drugs (prescribed in half of the 30 employed patients under biologic), that force the patient to move to the hospital to receive treatment.

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TABLE I. DEMOGRAPHIC, CLINICAL AND WORK RELATED CHARACTERISTICS OF THE STUDIED POPULATION

	Employed (n=73)	Retired (n=53)	Unemployed, not retired (n=40)
Age (years): median (min-max)	50 (28-64)	62 (44-81)	53 (21-73)
Gender (female): n (%)	53 (72.6)	40 (75.5)	35 (87.5)
Years of disease: median (min-max)	5 (0-35)	13 (0-43)	6 (1-21)
Under biologic: n (%)	30 (41.1)	33 (62.3)	13 (32.5)
HAQ: median (min-max)	1.125 (0-2.625)	1.375 (0 -2.875)	1.3125 (0-2.5)
VAS PGA: median (min-max)	47 (0-100)	50 (0-100)	50 (0-100)
VAS pain: median (min-max)	50 (0-100)	50 (0-100)	55 (0-100)
Absenteeism: median (min-max) n	0 (0-100), 73		
Presenteeism: median (min-max) n	40 (0-90), 56		
OWI: median (min-max) n	45.75 (0-95), 56		
DAI: median (min-max) n	50 (0-90), 73		

DAI: daily activity impairment; HAQ: health assessment questionnaire; OWI: overall work impairment; PGA: patient's global assessment; PRO: patient's reported outcome; VAS: visual analogue scale.

This was the first study to describe RA-related work impairment in Portugal, using a validated tool. Despite the limitations, it confirmed a high percentage of patients have no paid job, as well as significant work impairment values (presenteeism and OWI). In sum, in our country, RA still has negative impact on work productivity - this goes beyond the individual sphere, but also affects the society, considering indirect costs related to productivity loss [9].

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