wjpmr, 2019,5(12), 13-17

SJIF Impact Factor: 5.922

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH
www.wjpmr.com

Review Article
ISSN 2455-3301
WJPMR

SOCIO-ECONOMIC IMPACT OF RHEUMATOID ARTHRITIS AND ANKYLOSING SPONDYLITIS

Hamza Toufik*, Julien H. Djossou, Maijad Abderrahim, Mohamed Ahmed Ghassem, Najlae El Ouardi, Aziza Mounach and Lahsen Achemlal

Rheumatology Department, Mohammed V Military Hospital, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat - Morocco.

***Corresponding Author: Dr. Hamza Toufik**
Rheumatology Department, Mohammed V Military Hospital, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat - Morocco.

Article Received on 03/10/2019 **Article Revised on 24/10/2019** **Article Accepted on 14/11/2019**

ABSTRACT

Rheumatoid arthritis (RA) and ankylosing spondylitis (AS) are the two most frequent chronic inflammatory rheumatism (CIR). Their invalidating nature and their medical care explain the importance of the socio-economic impact that they generate. This work summarizes the studies that have addressed this aspect in patients. Most of these studies are unanimous on the economic, socioprofessional, sexual and family consequences of the two CIRs. The predictive factors of high cost are mainly the importance of the functional repercussion of the RIC and the use of biotherapy. Productivity losses make up the largest part of the total cost of RA and AS. The professional incapacity caused by these CIRs is often responsible for a temporary or permanent cessation of work and at best for a professional reclassification. In the family environment, the impact of these CIRs is essentially the disruption of the couple’s sexual and marital life and the impairment of quality of life concerning the patient’s children of school-age. All these damages attributed to RA and SPA raise a problem of patient support and socio-professional and family adjustment.

KEY WORDS: Rheumatoid arthritis; Ankylosing spondylitis; Socio-professional impact; Economic impact; Sexual impact; Family impact.

INTRODUCTION

Rheumatoid arthritis (RA) and Ankylosing Spondylitis (AS) constitute the most common chronic inflammatory disease in rheumatology.[1-3] They breed a major impact in the patient's life[1] physically, psychologically and socio-economically.[4] The physical and psychological impact of these diseases has already been the subject of several studies in terms of quality of life for patients with RA or AS. The This study aims to take stock of the socio-economic impact of these two main rheaumatic disorders through a literature review.

CONCEPT OF SOCIO ECONOMIC IMPACT

The socio-economic impact of RA and AS is the repercussion of these two pathologies on the social and economic aspects. Thus, it consists in evaluating the direct, indirect and intangible costs of RA and AS.[3, 5, 6] Direct costs are related to expenditure in terms of consumption of care such as consultations, hospitalizations, various treatments, biological and radiological explorations.[3, 7] They take into account also financial aid provided by the family and friends.[7] Indirect costs are defined by the professional impact in the form of losses of productivity in relation to work stoppages, the temporary or permanent cessation of work or professional reclassification.[5,7,8] The costs intangibles correspond to sexual, familial, and social repercussions.[5]

SOCIO ECONOMIC IMPACT OF RA

Direct costs of RA

Several studies around the world have evaluated the direct costs of RA. In France, a study reported in 2012 that the average annual direct cost of RA was around 4,000 euros per patient. But the authors of this study reported that with bioligical DMARDs this cost increased significantly from 4000 to 11 757 euros (EUR) on average per year.[7] In the same meaning, another study carried out in France had underlined in 2007 that the average annual cost attributable to RA of a patient treated with etanercept was 13,936 EUR against 5,764 EUR for a patient treated with leflunomide.[9] These two studies highlight the considerable impact of biotherapy on direct costs of RA. In Morocco, a study published in 2017 reported that the average of the monthly direct costs related to the RA was 510 dirhams (45.7 euros), but this study was made before the era of biotherapy in Morocco. The same study pointed out that subjects with insurance sickness spent 989 Moroccan dirhams (88.96 euros) per month while the subjects without coverage social security spending 411 Moroccan dirhams (36.97 euros) per month.[2,5] Moreover, it has been reported in the study that the financial expenditure related to RA were at the root of financial problems in 90% of the cases, resulting in poor treatment adherence. Similarly, according to one study conducted in Senegal in 2012, 78.9% of patients who had financial difficulties did not have any social security and this was a source of rupture 5 to 7 days a month in 30% of these patients.[10] These studies show that direct costs of RA for the patient are influenced whether or not he is a member of a system of social Security. According to a study published in 2014, the main predictive factors of a high direct cost were the biotherapy and high HAQ score.[11]

Indirect costs of RA

First, it must be emphasized that the professional impact of RA varies according to the duration of evolution of the sickness. From the first year of RA, Fautrel B and al reported that 51% of patients had altering their productivity at work with 25% of patients recognized as disabled workers.[7] After ten years of evolution of the disease, Hallert E et al stressed that less than 50% of patients could continue to work or normally go to their daily activities.[7, 12] Several other studies have reported various professional problems related to RA. In Morocco, according to a study published in 2006, 34% of patients were working before the onset of the illness; but all these patients reported the problem of delay and absenteeism related to RA and 64.7% of their workforce had to stop definitely work after a period of evolution average of 83 months of the disease.[5] Ndao A C and al reported that 34.3% of active patients had been put on permanent work stoppage and 14.3% were in temporary stoppage of work.[10] In France, according to a study published in 2008[13], 25% of patients had to change their work because of the RA with an estimated loss of income up to 30%. In addition, 34% of active patients under the age of 60 were gone to early retirement because of RA. In 2016, in another study carried out in France[8], among the 31 patients who were looking for work, 54% had lost their job because of RA. For Rkain H et al, the professional judgment related to RA was correlated with older age, male sex and laborious or manual work.[5] In contrast, according to Sokka T and al, work stoppage was strongly correlated with higher HAQ.[14] Kobelt G and al made the same remark in reporting that when the value of HAQ was less than one, 63% of patients could still to work ; but with an HAQ score of 2 or more, only 15% of patients remained active.[13] Bertin P et al also confirmed the strong correlation between the importance of functional impact and the occupational disabilities.[8] It is no longer to demonstrate that RA causes losses of productivity.[15-17] The study by Fautrel B and al reported that there is no consensus of method calculation of indirect costs. Indeed, the authors estimated the indirect annual cost average of RA to 1 441 euros according to the method called "friction costs" and to 8,452 euros according to the human capital method.[7] But it was noticed that the method of "friction costs" took into account the periods of work stoppage in the short term which are important in beginner RA. So it ignores the costs associated with prolonged sick leave and to functional disability that are in the first line in established RA. So the method of "costs of friction "probably understates the real impact of the RA on productivity losses and therefore on indirect costs.[18, 19, 20] In addition, productivity losses constitute the major part of the total cost of RA.[17]

Intangible costs of RA

Sexually

RA does not spare the sexual life of patients. A study conducted in 2011 on ten married women with RA reported that six of them had their degraded sex life since the appearance of their illness, the frequency of intercourse was decreased and decreased libido was reported in 60%. The reasons for these sexual problems were joint pain, stiffness and fatigue.[21] According to the study conducted in Morocco in 2006[5], 70% of patients had a disturbed sex life because of RA. The causes of this disturbance were pain (94%), fatigue (97%), decreased pleasure or disruption of body image (70.6%) and the difficulty of adopting a comfortable position during sexual intercourse (79%). These figures have confirmed in the publication of Hajjaj-Hassouni N in 2017.[2] Ndao A C and al also reported that sexual problems in RA were related to the pain and fatigue.[10] Vaginal dryness has been reported among so many other sexual problems in the study by Hill J and al.[22] In addition, studies have reported a decrease in male-related fertility side effects of drugs like the sulfasalazine and methotrexate which constitute first-line treatment of RA.[23, 24]

The family and social level

On the marital level, various reactions on the part healthy spouse have been reported. In the study of Rkain H et al[5], 42.5% of patients (only women) suffered different aspects of abuse from their husbands. But the study carried out Senegal in 2012 rather reported the support of the spouse according to 95.7% of married and Spousal indifference in 4.3% of cases.[10] Also RA affects the quality of life of children patients.[2, 5, 7] Indeed, problems of schooling and financial difficulties were reported. According to a study conducted in Marrakech in 2007, of the 66 RA patients with children, 98.5% said their children were affected in the emotional field and 44.6% reported that their children were assigned to the financial plan.[25] Meanwhile, the study of Hajjaj-Hassouni N underlined that among patients with children, 19% were forced to stop schooling their children cause of the financial difficulties induced by RA and 16% needed to keep their daughters at home for physical assistance.[2] In addition, RA affects the patient's daily life by making difficult to carry out various activities such as traveling, household activities, toilets, leisure activities, sports activities, family visits, outings, family celebrations, and participation in community activities.[5, 10, 26] So RA leads to a deterioration of the social relations, it limits the visits and social outings of the patient.[2, 5, 26] Rkain H et al reported that 47% patients reported deteriorating relationships related to RA.[5] More Schneider M and al emphasized that social exclusion was one of the most negative experiences experienced by patients with RA.[26] Finally, support in the workplace has been reported in France in a study published in 2016[8]: 37.7 % of active patients benefited from accommodations of their working conditions through an adaptation of the workstation or the purchase of special equipment (50.4%), an adaptation of schedules or days of (40.9%), a change in their duties within their company or administration (28.5%) or a homework opportunity (7.3%). In Morocco, family support psychological, financial and physics was reported respectively in 94%, 89%, and 92% of cases.[2, 5]

SOCIO ECONOMIC IMPACT OF AS

Direct costs of AS

The direct costs of the AS range from one study to another. In France, a study published in 2006 reported that the average annual cost were 3,364 euros.[27] In Morocco, however, according to a study published in 2007[6], the average monthly direct cost of the AS was 625.5 Moroccan dirhams (56 euros) and no patient was under biotherapy. In the same study, 82% of patients had financial difficulties caused by the direct costs of the AS and this was responsible for therapeutic nonobservance at 28% of patients. In Tunisia[3], a study reported in 2010 than the median average annual direct cost of the AS was 426,072 Tunisian dinars (266,295 euros) and two of the 50 patients in the study were under biological treatment. This last study emphasized than the median cost of drug treatment per patient per year was 171.55 Tunisian dinars (EUR 107.218) and had been largely influenced by prescribed biotherapy in only 2 patients on 50. This demonstrates the influence of biotherapy on the direct cost of the AS. Moreover, by excluding both cases of biotherapy from their study, Younes M et and reported that the predictive factors of a high cost were the NSAIDs consumption, BASRI and BASDAI.[3]

Indirect costs of SPA

The professional impacts of the AS are multiple. In effect, according to the study done in Tunisia in 2010[3], 34 patients were active in 50. The AS was responsible transient work stoppage in 4 patients, of a definitive work stoppage in 8 patients and a reclassification in 2 patients. Stopping professional experience had occurred after 9 years of the AS. Similarly, in the study by Rkain H and al on AS in Morocco[6], 70% of patients were active. The AS caused the delay, the absenteeism and the work stoppage respectively at 40.6%, 55.7%, 22.9% of the active subjects. The average duration evolution of the disease before the professional judgment definitive was 43.4 months. A study published in 2009 involving 103 patients suffering from AS in Tunisia reported that 19 patients had to spontaneously stop their professional activity after an average of six years and two months of the AS; three patients had been dismissed after six years and three months of evolution of their disease.[28] The unemployment rate linked to the AS was estimated at 20.6% in the same study. According to Montacer Kchir M and al, predictive factors related to risk of work stoppage were: female sex, low education, housing in rural environment, manual labor, exposure to cold on workplaces, weekly hours high workload and lack of help from colleagues. For the specific indices of the disease, the risk of arrest was correlated with a high BASFI score, BASDAI, BASMI and BASG-s.[28] The AS therefore causes productivity losses whose costs are difficult to quantify but represent more half of the total cost of the disease.[3, 17, 29]

Intangible costs of SPA

Sexually

The AS is responsible for various sexual disorders. The study conducted in Tunisia in 2010 reported that 24% of patients had sexual problems.[3] The same problems had been reported by 40% patients in the study published in 2007 on AS in Morocco[6] and according to this study, the alteration of life Sexuality was related to pain, fatigue, difficulty to adopt a comfortable position when reporting sex, lower libido, and the disruption of body image in respectively 92.3%, 69.2 %, 80.8%, 46.2%, and 57.7% of cases. Moreover, Pirildar T and al reported cases of sexual dysfunction type of erectile dysfunction and anorgasmia.[30] According to Younes M and al, sexual problems correlated with a high BASMI[3], whereas according to Rkain H et al, sexual disorders were correlated with a high BASFI.[6] Moreover, the SPA does not seem to have any influence fertility[31], but fertility can be decreased by some treatments of the disease like sulfasalazine which decreases the mobility of spermatozoa or anti-inflammatory drugs -anticox 2 type- that act on ovulation.[24, 31]

At the family and social level

Several studies have reported that patients are sometimes victims of negative reactions from their spouses, the quality of life of the children is affected particularly at the financial and school levels, the patient activities are also affected and their social relations are deteriorating.

Indeed, in the study of Younes M and al[3], 20 % of patients with AS reported negative reactions of the healthy spouse; the perturbation of daily activities interested the housewives activities (76%), shopping (92%), sports (96%), toilets (38%), social visits (60%) and travel (80%); family support psychological, financial and physical was found respectively in 90%, 52% and 74% of cases. Similarly, the study by Rkain H et al reported 10.7% cases of negative reactions from spouses in terms of infidelity, polygamy, divorce, physical or mental aggression, negligence.[6] The same study pointed out that among patients with children, 49.1% reported that their children were experiencing financial problems caused by the AS and on the other hand 14% of patients had to stop schooling their children for need of physical assistance at home. Of more, the study reported the disruption of the activities daily affecting mainly the field of visits social and patient movements with the consequence the deterioration of family relationships. Finally 17.6% of patients reported lack of support in the workplace.

CONCLUSION

This study shows that the socio-economic impact of RA is of greater interest than AS. However, these two diseases generate significant damage to the patient, his family and his professional activity. A strengthening of accompanying measures would therefore be desirable to all levels to limit the socio-economic impacts of these rheaumatic disordres.

REFERENCES

1. Rkain H. Evolution du concept de la qualité de vie au Maroc : cas de la polyarthrite rhumatoïde et de la spondyloarthrite ankylosante. Int J Med Surg., 2017; 4: 45-8.
2. Hajjaj-Hassouni N. La polyarthrite rhumatoïde au Maroc : d'hier a aujourd'hui. Int J Med Surg., 2017; 4: 41-4.
3. Younes M, Jalled A, Aydi Z, Zrour S, Korbaa W, Ben Salah Z, et al. Socioeconomic impact of ankylosing spondylitis in Tunisia. Joint Bone Spine. 2010; 77: 41-6.
4. Poivret D, Gossec L, Delannoy C, Giraudet-Le Quintrec J-S. Place des « proches » dans les programmes d'éducation thérapeutique des patients en rhumatologie : état des lieux et perspectives. Rev Rhum Monogr., 2013; 80: 193-6.
5. Rkain H, Allali F, Jroundi I, Hajjaj-Hassouni N. Socioeconomic impact of rheumatoid arthritis in Morocco. Joint Bone Spine. 2006; 73: 278-83.
6. Rkain H, Allali F, Bentalha A, Lazrak N, Abouqal R, HajjajHassouni N. Socioeconomic impact of ankylosing spondylitis in Morocco. Clin Rheumatol., 2007; 26: 2081-8.
7. Fautrel B, Gaujoux-Viala C. [Medical and economic aspects of rheumatoid arthritis]. Bull Acad Natl Med., 2012; 196: 1295-1305.
8. Bertin P, Fagnani F, Duburcq A, Woronoff A-S, Chauvin P, Cukierman G, et al. Impact of rheumatoid arthritis on career progression, productivity, and employability: The PRET Study. Jt Bone Spine Rev Rhum., 2016; 83: 47-52.
9. Juillard-Condat B, Constantin A, Cambon-Thomsen A, Bourrel R, Taboulet F. Coût de la polyarthrite rhumatoïde en France : comparaison léflunomide/étanercept. Thérapie., 2007; 62: 137-42.
10. Ndao A C, Ndongo S, Lekpfa F K, et al. Retentissement socioéconomique et qualité de vie au cours de la polyarthrite rhumatoïde au Sénégal. Médecine d'Afrique Noire., 2012; 59: 415- 420.
11. Chevreul K, Haour G, Lucier S, Harvard S, Laroche M-L, Mariette X, et al. Evolution of direct costs in the first years of rheumatoid arthritis: impact of early versus late biologic initiation--an economic analysis based on the ESPOIR cohort. PloS One., 2014; 9: 1-9.
12. Hallert E, Husberg M, Bernfort L. The incidence of permanent work disability in patients with rheumatoid arthritis in Sweden 1990- Impact socio-economique de la polyarthrite rhumatoide et de la spondylarthrite ankylosante 2010: before and after introduction of biologic agents. Rheumatol Oxf Engl., 2012; 51: 338-46.
13. Kobelt G, Woronoff A-S, Richard B, Peeters P, Sany J. Disease status, costs and quality of life of patients with rheumatoid arthritis in France: The ECO-PR Study. Joint Bone Spine., 2008; 75: 408-15.
14. Sokka T, Kautiainen H, Pincus T, Verstappen SMM, Aggarwal A, Alten R, et al. Work disability remains a major problem in rheumatoid arthritis in the 2000s: data from 32 countries in the QUEST-RA study. Arthritis Res Ther., 2010; 12: R42.
15. Verstappen SMM. Rheumatoid arthritis and work: The impact of rheumatoid arthritis on absenteeism and presenteeism. Best Pract Res Clin Rheumatol., 2015; 29: 495-511.
16. Kavanaugh A. Economic consequences of established rheumatoid arthritis and its treatment. Best Pract Res Clin Rheumatol., 2007; 21: 929-42.
17. Franke LC, Ament AJHA, van de Laar M a. FJ, Boonen A, Severens JL. Cost-of-illness of rheumatoid arthritis and ankylosing spondylitis. Clin Exp Rheumatol., 2009; 27: S118-123.
18. Björk M, Thyberg I, Rikner K, Balogh I, Gerdle B. Sick leave before and after diagnosis of rheumatoid arthritis--a report from the Swedish TIRA project. J Rheumatol., 2009; 36: 1170-9.
19. Mau W, Listing J, Huscher D, Zeidler H, Zink A. Employment across chronic inflammatory rheumatic diseases and comparison with the general population. J Rheumatol., 2005; 32: 721-8.
20. Xie F. The need for standardization: a literature review of indirect costs of rheumatoid arthritis and osteoarthritis. Arthritis Rheum., 2008; 59: 1027-33.
21. Frikha F, Maazoun F, Salah RB, et al. Dysfonction sexuelle chez dix femmes mariées atteintes de polyarthrite rhumatoïde. Presse Med., 2011; 40: 521–527.
22. Hill J, Bird H, Thorpe R. Effects of rheumatoid arthritis on sexual activity and relationships. Rheumatol Oxf Engl., 2003; 42: 280-6.
23. Fautrel B, Benhamou M. Rhumatisme inflammatoire chronique et procréation. Gynécologie Obstétrique & Fertilité., 2007; 35: 848–852.
24. Silva CA, Bonfa E, Stensen M. Maintenance of fertility in patients with rheumatic diseases needing antiinflammatory and immunosuppressive drugs. Arthritis Care Res., 2010; 62: 1682-90.
25. Ouilki I, Arrab R, Belkhou A, Ait Ouazar M, Younsi R, El Bouchti I, et al. Le retentissement de la polyarthrite rhumatoïde sur la vie des enfants: Etude transversale de 80 cas dans la région de Marrakech. Rev Rhum., 2007; 74: 1052.

26. Schneider M, Manabile E, Tikly M. Social aspects of living with rheumatoid arthritis: a qualitative descriptive study in Soweto, South Africa - a low resource context. Health Qual Life Outcomes, 2008; 6: 54.
27. Vallier N, Weill A, Salanave B, Bourrel R, Cayla M, Suarez C, et al. Coût des trente affections de longue durée pour les bénéficiaires du régime général de l'assurance maladie en, 2004.
28. Prat Organ Soins., 2006; 37: 267-83.
29. Montacer Kchir M, Mehdi Ghannouchi M, Hamdi W, Azzouz D, Kochbati S, Saadellaoui K, et al. Impact of the ankylosing spondylitis on the professional activity. Joint Bone Spine., 2009; 76: 378-82.
30. Kruntorádová K, Klimeš J, Šedová L, Štolfa J, Doležal T, Petíková A. Work Productivity and Costs Related to Patients with Ankylosing Spondylitis, Rheumatoid Arthritis, and Psoriasis. Value Health Reg Issues., 2014; Complete(4): 100-6.
31. Pirildar T, Müezzinolu T, Pirildar S. Sexual function in ankylosing spondylitis: a study of 65 men. J Urol., 2004; 171: 1598-600.
32. Perdriger A, Faccin M. Spondylarthrite et grossesse. Rev Rhum Monogr., 2015; 82: 38-41.