Quality of life and methods of coping with stress depending on the used form of therapy of rheumatoid arthritis treatment

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ABSTRACT

Introduction: There are studies, which prove a positive influence of biological drugs on effects of medical therapy but there are few of them, which focus on aspects of quality of life and coping with stress.
Purpose: To assess quality of life (QoL) and methods of coping with stress depending on the used form of therapy of rheumatoid arthritis (RA) treatment.
Materials and methods: Comparative analysis included 64 patients: I group B – treated with the method of biological agents; II group T - treated according to rheumatologic standards. The study used: Short Form 36 (SF–36)- general questionnaire use for assessment QoL, HAQ (Health Assessment Questionnaire) scale of functional efficiency, Mini-COPE inventory for coping with stress.
Results: Assessment of QoL with the use of the SF-36 questionnaire showed low QoL of patients in both groups. Higher QoL was observed in group B in all domains except PF domain where group T got a higher score. Analysis of QoL within total physical and mental health assessment also indicated higher QoL of patients from group B relatively PCS (39.8% vs. 33.5%) and MCS (56.9% vs. 40.9%; p<0.001). Analysis of coping with stress showed that the most common strategies of coping with stress in group B are positive: sense of humour (1.06 vs. 0.61; p=0.008) and planning (1.95 vs. 1.81), positive redefinition (1.59 vs. 1.48), acceptance (2.00 vs. 1.95). Whereas among patients in group T the strategy ‘turn to religion’ prevails (1.44 vs. 0.91; p=0.014).
Conclusions: Biological agents favourably affect assessment of QoL and a degree of functional disability in patients with significant intensification of the disease symptoms. In patients treated with biological drugs using positive strategies of coping with stress, and difficult situation is observed. Patients treated with biological drugs show better satisfaction from treatment and fewer unfavourable symptoms resulting from the used therapy.
Key words: Quality life, SF-36; rheumatoid arthritis, coping with stress

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INTRODUCTION

Rheumatoid arthritis (RA) is a chronic disease leading to disability, changes of mode, style and quality of life [1,2]. Frequently, onset of the disease reveals itself during the biggest professional and social activity of patient; therefore, it is much harder to accept, and it significantly affects patient's awareness [3]. It is worth paying attention to specificity of rheumatic diseases such as: prolonged time of waiting for improvement and return to efficiency, increased fear and aversion to physical effort intensifying pain, necessity of disciplined lifestyle, and cooperation with doctor [4].

Progress of the disease and its course is dynamic and dependent on duration of the disease, occurrence time of first symptoms and progress of destructive changes of joints. In most patients (even in 70%) the disease has a progressive course with periods of exacerbation and remission. Within first two years over 70% patients observe a significant joint damage. Intensification of clinical symptoms is equal to disease exacerbation, which leads to deformation changes and progressing disability [5].

The superior goal of RA treatment is leading to as early remission and as long its maintenance as possible. When this state cannot be obtained during therapy, next goal is a limitation of disease activity to a minimum. Many studies oriented at cellular processes of patients with RA have shown a direction for development of modern therapy methods. In Europe, biological drugs of new generation are used in patients with active form of the disease in whom classical "disease modifying anti-rheumatic drugs (DMARDs) turned out to be ineffective [2,7]

Long-term and severe course of RA, complexity of symptoms and many years' pharmacotherapy have their consequences in effects and affect a series of multiorgan changes increasing inconvenience of the disease and decreasing patients' quality of life(QoL) [6].

Among complications, one should also take into account drug-induced changes as a result of long-term pharmacotherapy. Undesirable symptoms of non-steroidal anti-inflammatory drugs (NSAIDs) are numerous dyspepsia, irritation of stomach mucous membrane, bleedings from alimentary tract and ulceration of the small intestine. Long-term using of steroidal drugs leads to metabolic disorders. Drugs modifying the disease course cause side effects of action giving the first noticeable effects after 2 months of using [2] and contribute to inflammatory changes in lungs or even irreversible lung fibrosis. Using leflunomide affect's disorders of alimentary tract, rash and hair loss. Despite a good effect on inflammatory process modern biological drugs cannot be omitted in the assessment of occurrence of side effects. They increase susceptibility to infections and revival of past infectious diseases [2].

Qualification for biological agents is not tantamount to starting treatment, and the program is still limited due to high costs of medicines. Three thousand patients use that program in Poland whereas over ten thousand in the European Union [7].

There are studies, which prove a positive influence of biological drugs on effects of medical therapy, costs of treatment, effectiveness and application safety but there are few of them, which focus on aspects of quality of life, disease acceptance and coping with stress.

The goal of the study was the assessment of quality of life and methods of coping with stress depending on the used form of therapy of RA treatment. Additionally, the influence of socio-demographic and clinical variables on quality of life and stress level of patients with RA was analyzed. Test of interdependence between quality of life and method of coping with stress was conducted as well.

MATERIALS AND METHODS

Comparative analysis included 64 patients hospitalized from November 2012 to February 2013 suffering from RA in Rheumatology and Internal Diseases Clinic of The Mikulicz-Radecki University Clinical Hospital in Wroclaw. The studies were carried out with consent of Bioethical Committee of Wroclaw Medical University (no. KB- 837/2012). Patients' diagnosis was made based on ACR criteria from 2010 [8].

The patients were divided into two groups:

- I group B – patients with RA treated in outpatient studied with the method of biological drugs reporting in monthly cycles to the clinic for administration of a single dose of drug in the form of drop infusion (32 people),
- II group T – patients with RA treated in the department according to rheumatologic standards, staying due to health state deterioration and disease exacerbation for about 1-2 weeks (32 people).

All the patients expressed a voluntary and conscious participation in the study; questionnaires were completed with the method of direct contact. In the diagnostic survey, the following was used:

- Assessment of quality of life was conducted with the use of general questionnaire of quality of life: Short Form 36 (SF–36). It is one of the most common tools for determining quality of life of various groups of patients and general population. The questionnaire consists of 36 items which are used to analyze two dimensions of quality of life: physical

(Physical Component Summary, PCS) and mental (Mental Component Summary, MCS). Quality of life in physical dimension (Physical Component Summary, PCS) consists of four sub scales:: physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), general health perception (GH). Quality of life in mental dimension (Mental Component Summary, MCS) also contains four sub scales:: vitality (VT), social functioning (SF), role limitation due to emotional problems (RE), assessment of one's own mental health (MH). The scale contains scoring 0–100 in each category, the number of points, the worse quality of life [9].

- HAQ scale of functional efficiency (Health Assessment Questionnaire) contains 20 questions from eight areas: getting dressed and toilet, getting up, eating, walking, personal hygiene, reaching, grabbing and daily effort. Response is scored from 0 to 3. Questions concern difficulties in performing particular activities during the previous week. The lower result, the smaller degree of disability of a patient with RA [10].
- Mini-COPE inventory for coping with stress. Mini-COPE is an abridged version of COPE (Stress-coping Multidimensional Inventory). The questionnaire contains 28 statements from 14 strategies. Responses are given in four-grade scale from 0 (hardly ever acts like this) to 3 (almost always acts like this) [11].
- Our own questionnaire consists of 25 questions divided into three groups: the first one concerns socio-demographic factors, i.e. age, sex, education, marital status, place of residence. The second group depicts a kind of disease symptom (movement limitation in joints, joint oedema, morning stiffness, decreased muscle power) affecting quality of life with RA and the third group contains questions concerning disease duration, remission occurrence, presence of side effects of drug application and measuring the satisfaction level of undertaken treatment.

Statistical analysis

The measurable (quantitative) variables were quality of life measured using the SF-36 questionnaire and HAQ questionnaire. The statistical analysis of questionnaire results involved the following tasks:

1. The distribution of all measurable variables was tested for a difference from the normal distribution. Evaluation of this used the Shapiro-Wilk tests. The assumed critical significance level was *p*=0.05.
2. To establish the significance of the differences in mean values in both groups for variables with normal distribution and homogeneous variance, we used the Student's *t*-test.
3. To establish the significance of the differences in mean values in both groups for variables with distribution different from the normal or non-homogeneous variance, we used the non-parametric U Mann-Whitney test.

The STATISTICA v. 9.0 software package was used for calculations.

RESULTS

The studies comprised 64 patients divided into two groups: group T – 32 people with RA treated with a traditional methods (27 females and 5 males) aged 29–83 (mean $\bar{x}$=60.5;SD=12.0) and group B—32 people with RA treated with biological agents (277 females and 55 males) aged 25–78 (mean $\bar{x}$=43.4; SD = 11.3).

Persons exposed to biological drugs (group B) were on average 17 years younger than people treated traditionally (group T) (43.4 vs. 60.5; p < 0.0001). In nearly half of the respondents in both groups, the first disease symptoms occurred over 10 years ago (53.1% group B vs. 43.8% group T). Whereas in group B there are people suffering from RA longer than patients from group T.

In group B prevailing, disease symptoms were movement limitation in joints (93.8% vs. 87.5%), morning stiffness (96.9% vs. 93.8%) and decreased muscle power (96.9% vs. 90.6%), whereas subfebrile body temperatures prevailed in group T (53.1% vs. 43.8%). Joint deformity in both groups occurred on the same level: 81.2%. It should be noticed that in each group disease, symptoms occurred with a very large intensification. Basic statistics characterizing both groups were put in Table 1.

Satisfaction from undertaken treatment was more often declared by patients from group B (84.4% vs. 50%; p < 0.01) than group T. Among patients from group T more often there were those who did not have any opinion about the used treatment (28.1% group T vs. 6.2% group B) or were unsatisfied (21.8% group T vs. 6.2% group B).

An analysis of undesirable symptoms connected with treatment was higher in the group T (84.4% vs. 75%). Most often patients from group T were accompanied by: decrease of organism immunity (37.5% vs. 31.3%), oedema (21.9% vs. 9.4%), significant increase of body mass (15.6% vs. 12.5%), hirsutism (12.5% vs. 9.4%) and sleep disorders (43.8% vs. 15.6%; p = 0.014) and tremors (12.5% vs. 0.0%; p = 0.039). In group B most often the following occurred: nausea (50.0% vs. 37.5%), arterial hypertension (15.6% vs. 9.4%), vomiting (12.5% vs. 9.4%), diarrhoea (12.5% vs. 6.3%), acne (9.4% vs. 3.15) and wound healing disorders (6.3% vs. 3.1%). Occurrence of undesirable symptoms connected with the used therapy in both groups is presented in Table 2.

Table 1. Socio-demographic and clinical characteristics of patients with RA divided into groups depending on the form of therapy.

Variable	**Group T (traditional therapy)**	**Group B (biological therapy)**	**Test result**
	N = 32	N = 32	
Age [year of life]:			**p < 0.0001**[a]
Mean ± SD	60.5 ± 12.0	43.4 ± 11.3	
Sex:			p = 0.731[b]
Females	27 (84.4%)	27 (84.4%)	
Males	5 (15,6%)	5 (15,6%)	
First symptoms of the disease:			p = 0,319[b]
up to a year ago	2 (6.2%)	0 (0.0%)	
1 to 5 years ago	6 (18.8%)	4 (12.5%)	
5 to 10 years ago	10 (31.2%)	11 (34.4%)	
Over 10 years ago	14 (43.8%)	17 (53.1%)	
Treatment satisfaction:			**p = 0.001**[c]
Yes	16 (50.0%)	27 (84.4%)	
No	7 (21.8%)	3 (9.4%)	
No opinion	9 (28.1%)	2 (6.2%)	
Disease symptoms: Pain	30 (93.8%)	17 (53.1%)	**p = 0.001**[c]
Movement limitations	28 (87.5%)	30 (93.8%)	p = 0.390
Subfebrile states	17 (53.1%)	14 (43.8%)	p = 0.459
Joint deformities	26 (81.2%)	26 (81.2%)	p = 1.000
Morning stiffness	30 (93.8%)	31 (96.9%)	p = 0.558
Decreased muscle power	29 (90.6%)	31 (96.9%)	p = 0.302

[a] t-Student test; [b] chi-square test with Yates correction; c – accurate Fisher test

Table 2. Occurrence of undesirable symptoms after administration of medicines in patients with RA dependence of pharmacological treatment.

Did undesirable symptoms occur in You after administration of medicines?	**Group T (traditional therapy) N = 32**		**Group B (biological therapy) N = 32**		**P value**
	n	(%)	n	(%)	
No	5	15,6%	8	25,0%	0,350
Nausea	12	37,5%	16	50,0%	0,314
Vomiting	3	9,4%	4	12,5%	0,691
Diarrhoea	2	6,3%	4	12,5%	0,395
Decrease of organism immunity	12	37,5%	10	31,3%	0,602
Disorders of wound healing	1	3,1%	2	6,3%	0,545
Ulceration of alimentary tract	2	6,3%	2	6,3%	1,000
Sleep disorders	14	43,8%	5	15,6%	**0,014**
Acne	1	3,1%	3	9,4%	0,298
Hirsutism	4	12,5%	3	9,4%	0,691
Significant increase of body mass	5	15,6%	4	12,5%	0,721
Arterial hypertension	3	9,4%	5	15,6%	0,453
Oedema	7	21,9%	3	9,4%	0,169
Menstruation disorders	3	9,4%	3	9,4%	1,000
Tremors	4	12,5%	0	0,0%	**0,039**
Psychoses	1	3,1%	0	0,0%	0,316
Other	3	9,4%	2	6,3%	0,645

Table 3. Self-evaluation of quality of life(with SF-36 questionnaire) in groups of patients with RA differing in a form of therapy.

Domain	**Group T (traditional therapy)**		**Group B (biological therapy)**		**P value**
	mean	SD	mean	SD	
PF	45.0	23.8	42.0	22.6	0.611
RP	14.1	28.4	29.7	37.3	0.064
RE	21.9	36.5	68.8	38.7	**<0.001**
VT	40.8	14.9	50.2	18.8	**0.031**
MH	53.7	17.5	62.4	17.9	0.056
SF	49.6	23.0	55.1	20.8	0.322
BP	34.1	17.1	37.4	19.6	0.467
GH	38.4	14.6	41.4	16.8	0.453
PCS	33.5	14.8	39.8	18.9	0.139
MCS	40.9	15.1	56.9	19.3	**<0.001**

PF – physical functioning ; RP – role limitations due to physical problems; BP – bodily pain; GH – general health perception; VT – vitality; SF – social functioning; MH – mental heath; RE – role limitation due to emotional problems; PCS-Physical component summary; MCS – Mental component summary

Assessment of health-related quality of life (HRQoL) with the use of the SF-36 questionnaire showed low quality of life of patients in both studied groups. Whereas higher quality of life was observed in group B in all domains of RP questionnaire (29.7 % vs. 14.1%), RE (68.8% vs. 21.9%), VT (50.2% vs. 40.8%), MH (62.4% vs. 53.7%), SF (55.1% vs. 49.6%), BP (37.4% vs. 34.1%), GH (41.4% vs. 38.4%), except PF domain where group T got a higher score (45.0% vs. 42.0%) p<0.001. Analysis of quality of life within total physical health assessment (PCS) and mental (MCS) also indicated higher quality of life of patients from group B relatively PCS (39.8% vs. 33.5%) and MCS (56.9% vs. 40.9%; p<0.001). Characteristics of particular domains are presented in Table 3. Patients from group B assessed their quality of life as the highest in domain RE (68.8±38.7) and MH(62.4±17.9) and MCS (56.9±19.3) whereas the lowest in domain RP (29.7±37.3) and BP (37.4±19.6). Patients from group T assessed their quality of life as the highest in domains MH (53.7±17.5), SF (49.6±23.0) and PF (45.0±23.8), while the lowest in domain RP (14.1±28.4) and RE (21.9±36.5).

The assessment of functional activity by HAQ questionnaire showed more activity limitations in group B (1.75±0.92 vs. 1.15±0.63) (ns). Data are shown in Table 4.

Table 4. Assessment of quality of life with the use of HAQ questionnaire in groups of patients with RA differing in a form of therapy.

Questionnaire	**Group T (traditional therapy)**		**Group B (biological therapy)**		**P value**
	mean	SD	Mean	SD	
HAQ	1.75	0.92	1.15	0.63	0.17

HAQ-Health Assessment Questionnaire

Analyzing detailed questions of HAQ questionnaire better physical activity and lower limitations of patients from group B were indicated in the areas: dressing and grooming (1.05 vs. 1.49; ns), eating (1.23 vs. 1.58; p=0.02); reaching (1.34 vs. 1.75 p=0.002); grip (1.63 vs. 2.28 p=0.002) and arising (1.54 vs 1.95; ns) Whereas in group T higher quality of life was observed in the areas: walking (1.67 vs. 1.81; 0.69 vs. 0.88) and hygiene (1.98 vs 1.82; p=0.002). HAQ questionnaire in both groups is presented in Table 5.

Table 5. Assessment of quality of life(by HAQ questionnaire) in groups of patients with RA.

Questionnaire question	**Group T (traditional therapy)**		**Group B (biological therapy)**		**P value**
	Mean	SD	Mean	SD	
Dressing and Grooming	1.49	0,82	1.05	0,61	0,229
Arising,	0.95	0.70	1.81	0.97	0.461
Eating	1.38	0.87	1.43	0.64	0.028
Walking	1.67	0.64	1.81	0.78	**0.002**
Hygiene	1.82	0.75	1.98	0.98	**0.002**
Reach	1.75	0.80	1.34	0.49	**0.028**
Grip	2.28	1.04	1.63	0.61	**0.032**
Activities	2.54	0.71	1.84	0.70	**0.002**

Analysis of stress level and coping with stress with the use of Mini–COPE questionnaire showed that the most common strategies of coping with stress in group B are positive strategies: sense of humour (1.06 vs. 0.61; p=0.008) and planning (1.95 vs. 1.81), positive redefinition (1.59 vs. 1.48), acceptance (2.00 vs. 1.95). Whereas among patients in group T the strategy ‘turn to religion’ prevails (1.44 vs. 0.91; p=0.014). Other used strategies in group T are negative strategies: dealing with something else (2.08 vs. 1.91), denial (0.97 vs. 0.91), relief (1.55 vs. 1.33), taking psychoactive substances (0.23 vs. 0.16), blaming oneself (1.19 vs. 0.81). The level of coping with stress in both groups assessed by Mini-COPE questionnaire is presented in Table 6.

Table 6. Strategies of coping with stress(Mini-COPE questionnaire) in groups of patients with RA differing in a form of therapy.

Mini-COPE	**Group T (traditional therapy)**		**Group B (biological therapy)**		**P value**
	mean	SD	mean	SD	
Active Coping (AC)	2.14	0.65	1.86	0.77	0.121
Planning (P)	1.81	0.64	1.95	0.61	0.375
Positive Redefinition(PR)	1.48	0.73	1.59	0.72	0.551
Acceptance (A)	1.95	0.54	2.00	0.62	0.749
Sense of humour (SH)	0.61	0.58	1.06	0.74	**0.008**
Turn to Religion (TR)	1.44	0.79	0.91	0.89	**0.014**
Seeking Emotional Support(SES)	2.28	0.61	2.05	0.70	0.158
Seeking Instrumental Support(SIS)	2.06	0.49	1.77	0.90	0.105
Dealing with Something Else(DSE)	2.08	0.56	1.91	0.61	0.245
Denial(D)	0.97	0.81	0.91	0.86	0.766
Relief(R)	1.55	0.59	1.33	0.47	0.104
Taking Psychoactive Substances(TPS)	0.23	0.54	0.16	0.35	0.493
Giving up Activities(GA)	0.83	0.75	0.88	0.66	0.791
Blaming Oneself(BO)	1.19	0.89	0.81	0.62	0.054

DISCUSSION

The increase of development of medicine and pharmacology carries more effective possibilities of treatment of patients with chronic diseases, including RA. It causes the increase of patients' quality of life and satisfaction from undertaken treatment, which is a determinant of treatment efficiency [12]. In Poland about 400000 people suffer from RA and they are between 30 and 50 year of life [10].

Assessment of quality of life depends not only on treatment methods but also on influence of series of factor's, i.e. socio-demographic difference, system of values, expectations, needs, attitudes and methods of valuing a disease situation and adaptation process of a patient to a new, changing situation [13]. Therefore, holistic approach to chronically ill patients is important while taking into account all spheres involved in health maintenance; according to WHO "health is bio-psycho-social well-being, not only lack of disease or ailments" [11].

According to the newest EULAR recommendations, the most important goal of RA treatment is quick achievement of remission or at least little activities of the disease. Administering only classical drugs modifying the disease course it is not always possible and then there is the need of using biological drugs [14].

It is worth emphasizing that using biological drugs, especially in a therapy associated with metotrexat (MTX), a significantly bigger inhibition of progression of structural changes in joints is obtained. During long-term treatment (12-24 months) with Tocilizumabatem (TCZ) total inhibition of progress of radiological changes was found in 85% patients taking TCZ (LITHE examination), and in 67% treated with ABA and in 87% patients after failure in treatment by TNF inhibitors when RTX (Rituximab) was included in the treatment [15]. For patient quickness of obtained improvement is important as well. Using TCZ during first two weeks of treatment the decrease of disease activity was indicated.

Currently, there are publications, which prove a favourable effect of biological agents as well as improvement of quality of life [16,17] but there are no studies, which compare quality of life between patients treated with biological drugs and traditional method.

In our own conducted research assessment of quality of life (HRQoL) by SF-36 questionnaire showed low quality in all dimensions of life in both studied groups. Despite a similar image of the disease: duration and intensification of disease symptoms among the respondents, significantly higher quality of life was recorded in the group of patients treated with biological agents (B) in all domains of RP questionnaire (29.7% vs. 14.1%), RE (68.8% vs. 21.9%), VT (50.2% vs. 40.8%), MH (62.4% vs. 53.7%), SF (55.1% vs. 49.6%), BP (37.4% vs. 34.1%), GH (41.4% vs. 38.4%), except PF domain where the group of patients treated with traditional therapy (T) obtained a higher scores (45.0% vs. 42.0%) $p<0.001$. Analysis of quality of life within total assessment of physical health (PCS) and mental (MCS) also indicated higher quality of life of patients from group B relatively PCS (39.8% vs. 33.5%) and MCS (56.9% vs. 40.9%; $p<0.001$).

We can conclude that factors characterizing group B, i.e. much younger age, rarer occurrence of co-existing diseases and definitely higher satisfaction from treatment are responsible for such an index. In group B, over 53% respondents suffered from RA more than 10 years. Sherrer et al. [18] in their research report that functioning of patients with RA in everyday life stabilizes after first several years of the disease duration. Physical disability proceeds quickly in an early period of the disease and in later years, progression proceeds very slowly [18]. In our different studies on a group of patients with RA, we showed that younger patients, better educated and remaining in partnership relationships have a better quality of life [19]. Moreover, people from group B assessed their quality of life higher within HAQ questionnaire and indicated fewer limitations caused by the disease within diet, carrying and lifting weights and car door opening. Abilities of self-reliant functioning in many fields of daily activities certainly affect a higher assessment of QoL. Among the respondents from group B, positive forms of relieving emotions were used in stress situations more frequently. Furthermore, the studies by Baczyk proved that patients suffering to longer have a higher assessment of life satisfaction. While among people, suffering more than five-year assessment of quality of life was more favourable in comparison with those who suffered shorter [20].

The reason for lower quality of life of patients in group T might be occurring pain ailments associated with joint changes and occurring undesirable symptoms connected with the used treatment. In a study by Wysocka-Skurska [21] a negative correlation between occurrence of pain ailments and assessment of quality of life in domains: PCS and MCS were observed.

In the present research group, B obtained lower disability index in performing everyday activities compared to group T (HAQ 0.8 vs. 1.3). Many authors prove [21-23] a significant, unfavourable effect of disability on quality of life assessment both in the physical and mental sphere.

The subject literature confirmed that in people over 60 a rapid progress of the disease takes place as well as quicker loss of physical efficiency. It was estimated that at least 50% patients under 65 during first, 10 years of the disease are unable to perform professional activities, and as a result they take a disability pension [24,25]. In our own studies people from group T were on average 17 years older than people from the group B.

Important issues in patients with RA from the perspective of quality of life are accompanying diseases, long-term pharmacotherapy and occurrence of undesirable activities as well. It is noticed that over half of patients with RA have at least one other co-existing chronic disease. The most common ones are chronic diseases of respiratory system, alimentary system, circulatory system, diabetes or amyloidosis [26].

In our own research, more ailments connected with treatment were observed in patients from group T (83.7%). The patients complained about sleep disorders, nausea, vomiting, oedema, wound healing disorders, hair loss.

Psychiatric illness is a relatively common disorder in patients with RA, with a frequency higher than that of other general medical conditions. When the clinical picture in RA cases becomes complicated with anxiety or depression, some problems at patients' adaptation and response to treatment may be possible. Anxiety is a more common disorder than depression. Functional disability, social stress and morning stiffness were the factors highly associated with depression. The first step in correct management is recognition of anxiety and depression so that appropriate treatment can be tried. Particular attention has to be paid to social stress and lack of social support [27,28].

Analyzing data obtained with the use of Mini–COPE questionnaire a significant orientation of group T at emotions was observed as well as concentration on a problem, more frequent denying, relieving, blaming oneself and turn to religion. Similar reactions of coping with stress were presented by Newth et al. in their study but made them dependent, mainly on an intensification degree of felt pain ailments at different times of the day [29]. Whereas group B was characterized by different values, i.e. planning, positive redefinition, acceptance and significant increase of sense of humour. It is conditioned by significant diversity of both groups in dealing with a difficult situation and as a result by a different increase of the stress level, in particular, groups. Jedryka–Goral [30] in her study referring to authors of the theory of ‘psychological stress’ distinguishes two forms of coping with stress: concentration on emotions and concentration on problems. Passive coping is prayer, meditation. This dependence is confirmed by group T. Group B is confirmed by researchers’ guidelines that coping with stress in RA should be oriented at active coping (e.g. learning a new profession) as well as confrontation, distancing oneself, self-control, planning, positive redefinition, etc. [30].

Using biological drugs does not guarantee obtaining remission in each patient and response to treatment is an individual issue. However, it is worth emphasizing that by using biological drugs, especially in a therapy associated with MTX significantly bigger progression inhibition of structural changes in joints is obtained [31]. For patient quickness of obtained help and influence of the disease on daily functioning is important. There are few studies, which explore the effect of therapy on quality of life and those which are common concern clinical benefits. Our own studies proved a favourable effect of the used biological agents on quality of life, decrease of functioning limitations caused by the disease and skills of coping with stress.

Study Limitations

A limitation of the study is the number of patients as well as its selection, where patients from group T were examined in terms of hospitalization, while group B patients in an outpatient setting. Patients stay in the hospital may be a factor influencing the assessment of the quality of life and sense of stress.

CONCLUSIONS

1. Biological agents favourably affect assessment of quality of life (SF–36) and a degree of functional disability (HAQ) in patients with significant intensification of the disease symptoms.
2. In patients treated with biological drugs using positive strategies of coping with stress, and difficult situation is observed.
3. Patients treated with biological drugs show bigger satisfaction from treatment and fewer unfavourable symptoms resulting from the used therapy.

Conflicts of Interest

The author declares that he has no competing interests in the publication of the manuscript.

REFERENCES

1. Wallenius M, Skomsvoll J.F, Koldingsnes W, Rødevand E, Mikkelsen K, Kaufmann C, Kvien TK. Comparison of work disability and health-related quality of life between males and females with rheumatoid arthritis below the age of 45 years. Scand J Rheumatol. 2009;38(3): 178-83.
2. Bettembourg-Brault I, Gossec L, Pham T, Gottenberg JE, Damiano J, Dougados M. Leflunomide in rheumatoid arthritis in daily practice: treatment discontinuation rates in comparison with other DMARDs. Clin Exp Rheumatol. 2006 Mar-Apr;24(2):168-71.
3. Hodkinson B, Musenge E, Ally M, Meyer PW, Anderson R, Tikly M. Functional disability and health-related quality of life in South Africans with early rheumatoid arthritis. Scand J Rheumatol. 2012 Oct;41(5):366-74.
4. Pollard L, Choy EH, Scott DL. The consequences of rheumatoid arthritis: quality of life measures in the individual patient. Clin Exp Rheumatol. 2005 Sept-Oct; 23(5 Suppl 39):S43-52.
5. Markatseli TE, Papagoras C, Drosos AA. Prognostic factors for erosive rheumatoid arthritis. Clin Exp Rheumatol. 2010Jan-Feb; 28(1):114-23.
6. Morel J, Combe B. How to predict prognosis in early rheumatoid arthritis. Best Pract Res Clin Rheumatol. 2005;19(1):137-46.
7. Świerkot J, Madej M. Biologic drugs for the treatment of rheumatoid arthritis. In: Rheumatology 2011/2012 - new trends. (ed.) Piotr Wiland, Poznan: Termedia: 59-78. (Polish)
8. Smolen JS, Landewé R, Breedveld FC, i wsp. Smolen JS, Landewé R, Breedveld FC, Buch M, Burmester G, Dougados M, Emery P, Gaujoux-Viala C, Gossec L, Nam J, Ramiro S, Winthrop K, de Wit M, Aletaha D, Betteridge N, Bijlsma JW, Boers M, Buttgereit F, Combe B, Cutolo M, Damjanov N, Hazes JM, Kouloumas M, Kvien TK, Mariette X, Pavelka K, van Riel PL, Rubbert-Roth A, Scholte-Voshaar M, Scott DL, Sokka-Isler T, Wong JB, van der Heijde D. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2013 update. Ann Rheum Dis. 2014 Mar;73(3):492-509.
9. Ware E, Snow KK, Kosinski M, Gandek B. SF-36 Health Survey Manual and Interpretation Guide. Boston, MA: New England Medical Center, The Health Institute.1993.
10. Filipowicz-Sosnowska A, Rupiński R. Complexity of the disablement process in rheumatoid arthritis. Reumatology. 2005; 43(3):138–46. (Polish)
11. Ogińska-Bulik N, Langer I. Type D personality, coping with stress and intensity of PTSD symptoms in firefighters. Med Pr. 2007; 58 (4): 307–16. (Polish)
12. Oude Voshaar MA, ten Klooster PM, Taal E, van de Laar MA. Measurement properties of physical function scales validated for use in patients with rheumatoid arthritis: a systematic review of the literature. Health Qual Life Outcomes. 2011 Nov 7;7:99.
13. Kosinski M, Kujawski SC, Martin R, Wanke LA, Buatti MC, Ware JE Jr, Perfetto EM. Health-related quality of life in early rheumatoid arthritis: impact of disease and treatment response. Am J Manag Care. 2002 Mar;8(3):231–40.
14. Strand V, Rentz AM, Cifaldi MA, Chen N, Roy S, Revicki D. Health-related quality of life outcomes of adalimumab for patients with early rheumatoid arthritis: results from a randomized multicenter study. J Rheumatol. 2012 Jan;39(1):63-72.
15. Swierkot J, Madej M. The meaning of biologic therapy in the treatment of rheumatoid arthritis with the focus on clinical remission. Part II. Tocilizumab, Abatacept, Rituximab--drugs characterised by a different mechanism of action than TNF-alpha inhibitors]. Pol Merkuriusz Lek. 2011 Apr;30(178):289-94. (Polish)

16. Sherrer YS, Bloch DA, Mitchell DM, Roth SH, Wolfe F, Fries JF. Disability in rheumatoid arthritis: comparison of prognostic factors, across three populations. J Rheumatol. 1987Aug;14(4):705–9.
17. Jankowska B, Uchmanowicz I, Polański J, Uchmanowicz B, Dudek K. Clinical and sociodemographic factors determining quality of life in rheumatoid arthritis (Ra). Family Med Prim Care Rev. 2010;12(4): 1027–34.
18. Bączyk G. The review of investigations of quality of life of patients with rheumatoid arthritis. Reumatology. 2008;46(6):372–9. (Polish)
19. Wysocka-Skurska I, Sierakowska M, Sierakowski S. Evaluation of the quality of life of patients with rheumatoid arthritis depending on the used therapy. Reumatology. 2012;50(1): 16–23. (Polish)
20. Hoving JL, Bartelds GM, Sluiter JK, Sadiraj K, Groot I, Lems WF, Dijkmans BA, Wijbrandts CA, Tak PP, Nurmohamed MT, Voskuyl AE, Frings-Dresen MH. Perceived work ability, quality of life, and fatigue in patients with rheumatoid arthritis after a 6-month course of TNF inhibitors: prospective intervention study and partial economic evaluation. Scand J Rheumatol. 2009;38(4):246-50.
21. Kowalczyk K, Głuszko P. Assessment of the quality of life of patients with rheumatoid arthritis by means of questionnaire research. Reumatology. 2009;47(1):4–9. (Polish)
22. Ruta DA, Hurst NP, Kind P, Hunter M, Stubbings A. Measuring health status in British patients with rheumatoid arthritis: reliability, validity and responsiveness of the short form 36-item health survey (SF-36). Br J Rheumatol. 1998 Apr;37(4):425–36.
23. Welsing PM, van Gestel AM, Swinkels HL, Kiemeney LA, van Riel PL. The relation-ship between disease activity, joint destruction, and functional capacity over the course of rheumatoid arthritis. Arthritis Rheum. 2001 Sep;44(9):2009−17.
24. Wolfe F, Michaud K, Gefeller O, Choi HK. Predicting mortality in patients with rheumatoid arthritis. Arthritis Rheum. 2003 Jun;48(6):1530-42.
25. Isik A, Koca SS, Ozturk A, Mermi O. Anxiety and depression in patients with rheumatoid arthritis. Clin Rheumatol. 2007 Jun;26(6):872-8.
26. el-Miedany YM, el-Rasheed AHIs anxiety a more common disorder than depression in rheumatoid arthritis? Joint Bone Spine. 2002 May;69(3):300-6.
27. Newth S, Delongis A. Individual differences, mood, and coping with chronic pain in rheumatoid arthritis: a daily process analysis. Psychol Health. 2004;19(3):283–305.
28. Aletaha D, Neogi T, Silman AJ, Funovits J, Felson DT, Bingham CO 3rd, Birnbaum NS, Burmester GR, Bykerk VP, Cohen MD, Combe B, Costenbader KH, Dougados M, Emery P, Ferraccioli G, Hazes JM, Hobbs K, Huizinga TW, Kavanaugh A, Kay J, Kvien TK, Laing T, Mease P, Ménard HA, Moreland LW, Naden RL, Pincus T, Smolen JS, Stanislawska-Biernat E, Symmons D, Tak PP, Upchurch KS, Vencovsky J, Wolfe F, Hawker G. 2010 rheumatoid arthritis classification criteria: an American College of Rheumatology/European League Against Rheumatism collaborative initiative. Ann Rheum Dis. 2010 Sep;69(9): 1580-8.
29. Bingham CO 3rd, Weinblatt M, Han C, Gathany TA, Kim L, Lo KH, Baker D, Mendelsohn A, Westhovens R. The effect of intravenous golimumab on health-related quality of life in rheumatoid arthritis: 24-week results of the phase III GO-FURTHER trial. J Rheumatol. 2014 Jun;41(6):1067-76.
30. Kimel M, Cifaldi M, Chen N, Revicki D. Adalimumab plus methotrexate improved SF-36 scores and reduced the effect of rheumatoid arthritis (RA) on work activity for patients with early RA. J Rheumatol. 2008 Feb;35(2):206-15.
31. Rigby W, Ferraccioli G, Greenwald M, Zazueta-Montiel B, Fleischmann R, Wassenberg S, Ogale S, Armstrong G, Jahreis A, Burke L, Mela C, Chen A. Effect of rituximab on physic-cal function and quality of life in patients with rheumatoid arthritis previously untreated with methotrexate Arthritis Care Res (Hoboken). 2011 May;63(5):711-20.