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RESULTS OF TREATMENT BY DIFFERENT BIOLOGICAL MEDICATIONS OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS IN THE ADJARA REGION

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აქსიალური სპონდილოართრიტით დაავადებული პაციენტების სხვადასხვა ბიოლოგიური მედიკამენტით მკურნალობის შედეგები აჭარის რეგიონში

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რეზიუმე

მაანკილოზებელი სპონდილიტი არის ქრონიკული აუტოიმუნური დაავადება, რომელიც გავლენას ახდენს ხერხემალზე, უკარგავს მას მოქნილობას და იწვევს მის დეფორმაციას - შერწყმას. დაავადება ჩვეულებრივ იწყება გვიან მოზარდებში ან საშუალო ასაკის ჯგუფში, რის გამოც მნიშვნელოვანია მისი დროული მკურნალობა. ბოლო წლებში განვითარებული ბიოლოგიური თერაპია გვიჩვენებს ეფექტურ შედეგებს.

ჩვენ შევადარეთ ორი სხვადასხვა ბიოლოგიური მედიკამენტით, კერძოდ სიმსივნის ნეკროზის ფაქტორის (TNF) ინჰიბიტორ - გოლიმუმაბით და ინტერლეიკინ 17A ინჰიბიტორის - სეკუკინუმაბით მკურნალობის შედეგები აქსიალური სპონდილოართრიტით დაავადებულ პაციენტებში. ჯგუფში, რომლებიც გადიოდნენ ინტერლეიკინ 17A ინჰიბიტორის - სეკუკინუმაბით მკურნალობის კურსს, მკურნალობის დასაწყისში, მე-3, მე-6 და მე-12 თვის თავზე ტკივილის ინტენსივობის, C რეაქტიული ცილისა (CRP) და ერითროციტების დალექვის სიჩქარის (ESR) მონაცემების ანალიზის შედეგად, გამოვავლინეთ, რომ მკურნალობის ხანმოკლე პერიოდში, კერძოდ ერთ წლამდე ვადაში პაციენტებში ტკივილის ინტენსივობა და დაავადების ანთებითი მაჩვენებლები საგრძნობლად მცირდება, რაც ხაზს უსვამს ბიოლოგიური მედიკამენტებით მკურნალობის ეფექტურობას.

ჩვენმა კვლევამ აჩვენა, რომ ბიოლოგიური მედიკამენტებით თერაპია მნიშვნელოვნად აუმჯობესებს პაციენტების ცხოვრების ხარისხს, ამცირებს ანთებით რეაქციას, რაც განაპირობებს სხეულის მობილურობისა და მოქნილობის ზრდას. დღეისათვის ბიოლოგიური მედიკამენტებით მკურნალობა ერთ-ერთი ყველაზე ეფექტური საშუალებაა აქსიალური სპონდილოართრიტის მართვისათვის. აქსიალური სპონდილოართრიტის ადრეული დიაგნოსტიკა და მკურნალობა დაავადების სტაბილური და ხანგძლივი რემისიის წინაპირობაა.

Background. Secukinumab is a novel biologic agent specifically targeting interleukin-17 (IL-17) involved in a pathological process. It is a fully human monoclonal antibody [3]. Secukinumab is the only IL-17A inhibitor approved in psoriasis, psoriatic arthritis (PsA) and ankylosing spondylitis (AS) [4]. Biologicals are a relatively new class of treatments that specifically target cytokines or cells of the immune system, like tumor necrosis factor alpha inhibitors or B-cell blockers. A new kid on the block is the interleukin-17 (IL-17) inhibitor Secukinumab, which has been recently approved by the US Food and

Drug Administration for moderate-to-severe plaque psoriasis, psoriatic arthritis, and AS [5]. Secukinumab is the first and only IL-17A inhibitor to show sustained improvements in signs and symptoms of ankylosing spondylitis (AS) and psoriatic arthritis (PsA) [6]. Interleukin-17 is a proinflammatory cytokine released by T-helper-17 (Th17) cells. Under the action of interleukin-6 and transforming growth factor-ß, CD4 T cells differentiate into Th17 cells and induce the expression of interleukin-23 receptors (IL-23R) and IL-17. Apart from T-cells, mast cells and neutrophils also secrete IL-17. Interleukin-17 encompasses a group of cytokines, IL-17A to IL-17F, with IL-17A being the key effector cytokine. Furthermore, IL-17A is 10-30 more potent than IL-17F displaying a greater affinity to the interleukin-17 receptor (IL-17R) [3]. Secukinumab binds selectively to IL-17A and inhibits its interaction with the IL-17 receptor, inhibits the release of proinflammatory cytokines and chemokines [7]. The number of IL-17A-producing lymphocytes resulting in raised IL-17A concentrations is observed in psoriatic arthritis and ankylosing spondylitis. Secukinumab specifically targets IL-17A, thereby blocking its binding with IL-17R and the expression of cytokines. This blockade normalizes the inflammatory processes and thus combats epidermal hyperproliferation, T-cell infiltration, and excessive expression of pathogenic genes [3].

American College of Rheumatology/Spondylitis Association of America/Spondylarthritis Research and Treatment Network (ACR/SAA/SPARTAN) guidelines published prior to the US approval of Secukinumab strongly recommend TNF inhibitors for AS patients whose disease remains active despite first-line treatment with NSAIDs [7]. The recently updated ASAS-European League Against Rheumatism (EULAR) guidelines recommend that biologic disease-modifying antirheumatic drugs (i.e., TNF inhibitors and IL-17 inhibitors) should be considered in patients with persistently high disease activity despite conventional treatments (including NSAIDs) [7]. The UK National Institute for Health and Care Excellence (NICE) recommends Secukinumab as an option for treating active AS in adults whose disease has responded inadequately to conventional NSAID or TNF inhibitor therapy [7]. Subcutaneous secukinumab is indicated for the treatment of adults with active AS who have responded inadequately to conventional therapy. Secukinumab is available as a lyophilized powder (150 mg) in a vial for reconstitution, or as a 150 mg/mL solution for injection in a pre-filled pen or syringe. The lyophilized powder for reconstitution is to be administered by healthcare professionals only, whereas secukinumab in a pre-filled pen or syringe may be self-administered following proper training in subcutaneous injection technique [7]. The recommended dosage of secukinumab is 150 mg administered at weeks 0, 1, 2, 3 and 4 followed by 4-weekly (USA) or monthly (EU) dosing commencing at week 4 or, alternatively, in the USA, commencing on a 4-weekly schedule with the omission of the loading doses. Each injection should be administered at a different site (upper arm, abdomen or thigh) than the previous injection. Discontinuation of secukinumab should be considered if no response is seen after 16 weeks of treatment, patients with an initial partial response may subsequently improve with continued treatment beyond 16 weeks [7]. Secukinumab is effective and generally well tolerated for the treatment of adults with active AS, with efficacy and tolerability sustained over the longer term. Secukinumab is an effective therapy for TNF inhibitor-naive patients with active AS, and provides a useful treatment option for patients who have an inadequate response to or are intolerant of TNF inhibitors [7].

Management can be followed according to the treatment guidelines and criteria given in the ACR/SAA/SPARTAN and the ASAS/EULAR [8,9]. Therefore, a multidisciplinary management is followed for providing the best possible care [10].

- The first inseparable mode of management is to do any form of physical exercises, as it helps in subsiding the ankylosing spondylitis symptoms by reducing in ammation.

- Then comes the NSAIDs (first line drugs) but is only for symptomatic relief and management, also it is always to be taken with doctor's advise as it is contraindicated in few situations along with this it has various side-effects.
- Now comes the Steroid medications, which again have contraindications and numerous side effects. Steroids reduce the inflammation and pain but routine use of steroid medication is non-advisable. Local injections of corticosteroids are given for peripheral arthritis. Using systemic glucocorticoids is not recommended in long term.
- Methotrexate has a very restricted role in Ankylosing Spondylitis management and is prescribed in a very few cases only. Sulfasalazine is recommended only for persistent peripheral arthritis when TNF-α inhibitors are contraindicated.
- Biological therapy (these biologic therapies cannot reverse any damage or fusion of the spine and sacroiliac joints that has already occurred, but research has shown than many people with long-standing disease can still have significant improvement with them. People who do not respond sufficiently (it may take 3-6 months to be certain), or who get serious side effects, will usually be recommended to stop their biologic therapy).
- TNF-α inhibitors (second line drugs) are the first line of treatment in those who cannot take NSAIDs. It includes a few biologic preparations such as Infliximab (5 mg/kg intravenous over at least 2 hours at 0,2,6 weeks than every 6 week), Adalimumab (40 mg subcutaneous every 2 weeks), Etanercept (50 mg subcutaneous once weekly), Golimumab (50 mg subcutaneously once a month), Certolizumab Pegol.

A recent review of ACR 2019 guidelines mentions that TNF-α inhibitors held a reasonable prospect of benefit and should be used in most patients, rather than immediately switching to a different class of biologics. ACR 2019 guidelines also states that [11]:

- Adding methotrexate or sulfasalazine to biologics is not recommended.
- Switching to other biologics is not good approach.
- Switching from a biologic to biosimilars is also not appreciated.
- In any co-existent condition with ankylosing spondylitis such as recurrent uveitis, IBD treatment with TNF-α inhibitor monoclonal antibodies is advised over treatment with other biologics.
- In adults with active AS despite treatment with NSAIDs, treatment with TNF-α inhibitor over treatment with secukinumab or ixekizumab is conditionally recommended.
- Surgery - Some patients may be diagnosed in late stages they can manifest ankylosed hip joint which is a very problematic situation as they are not able to sit, stand or walk so in such patients hip replacement surgery is recommended, we face a problem of intubation in them because of AS which can be easily managed by a good anaesthesiologist.

Aim of the Study. This study compared treatment outcomes in patients with axial spondyloarthritis receiving two different biological therapies. Outcomes were evaluated in 29 patients treated with the tumor necrosis factor (TNF) inhibitor Golimumab and in 30 patients treated with the interleukin-17A (IL-17A) inhibitor Secukinumab. The study focused on assessing the effectiveness of these therapies in the management of axial spondyloarthritis in the Adjara region.

Materials and Methods. Two observational studies were conducted in patients with axial spondyloarthritis at the Rheumatology Department of SoloMed Clinic, Batumi, Georgia. The primary objective was to evaluate the effectiveness of biological therapy on clinical symptoms and inflammatory markers. The first study included 29 patients (22 males and 7 females) aged 24–65 years who were treated with golimumab, a tumor necrosis factor-α (TNF-α) inhibitor. Golimumab was administered subcutaneously at a dose of 50 mg once monthly. This study was conducted between October 2022 and

December 2023. The second study, conducted from 2023 to 2024, included 30 patients (13 males and 17 females) aged 22–72 years who received the interleukin-17A (IL-17A) inhibitor Secukinumab. Secukinumab was administered subcutaneously at a dose of 150 mg once weekly for the first five weeks, followed by monthly injections for one year. In both studies, pain intensity, C-reactive protein (CRP) levels, and erythrocyte sedimentation rate (ESR) were assessed at baseline and after 3, 6, and 12 months of treatment.

Results. Biological therapy with Golimumab, showed a reasonable improvement in the progression of axial spondyloarthritis, by consequential reduction in the pain intensity along with a fall in increased levels of CRP and ESR over the course of therapy. The pain intensity in both male and female patients shifted from severe to moderate and moderate to light gradually (Table 1). At the beginning of biological therapy, 83% of patients (82% males, 86% females) had severe pain intensity, 17% of patients (18% males, 14% females) had moderate pain intensity, and none of them had light pain intensity. After 3 months, 21% of patients (18% males, 28% females) had severe pain intensity, 65% of patients (64% males, 71% females) had moderate pain intensity, and 14% of patients (18% males, 0% females) had light pain intensity. After 6 months, none of the patients had severe pain intensity, 69% of patients (69% males, 72% females) had moderate pain intensity, and 31% of patients (31% males, 28% females) had light pain intensity. After 12 months, none of the patients had severe pain intensity, only 17% patients (22% males, 0% females) had moderate intensity, and 83% patients (78% males, 100% females) had light pain intensity.

Table 1. Amount (%) of patients by pain intensity (Golimumab)

Course of Therapy	Light pain			Moderate pain			Severe pain		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
At the Beginning	0	0	0	18	14	17	82	86	83
After 3 months	18	0	14	64	71	65	18	28	21
After 6 months	31	28	31	69	72	69	0	0	0
After 12 months	78	100	83	22	0	17	0	0	0

The increased levels of CRP (>6mg/L) also exhibited a gradual fall over the course of therapy (Table 2). At the beginning, 100% of patients (100% males, 100% females) had elevated CRP. After 3 months, 96% of patients (95% males, 100% females) had high CRP. After 6 months, 55% of patients (54% males, 57% females) had high CRP. After 12 months, only 10% of patients (9% males, 8% females) had elevated CRP.

Table 2. Amount (%) of patients by levels of CRP (>6 mg/L) (Golimumab)

Course of therapy	Male		Female		Total	
	n	%	n	%	n	%
At the Beginning	22	100	7	100	29	100
After 3 months	21	95	7	100	28	96
After 6 months	12	54	4	57	16	55
After 12 months	2	9	1	8	3	10
n = number of patients % = percentage of patients						

The elevated ESR declined quickly over the course of therapy (Table 3). At the beginning, 93% of patients (95% males, 85% females) had elevated ESR. After 3 months, only 34% of patients (36% males, 28% females) had high ESR. After 6 months, just 4% of patients (4% males, 0% females) had high ESR.

Table 3. Amount (%) of patients by levels of ESR (>22mm/hr) (Golimumab)

Course of therapy	Male		Female		Total	
	n	%	n	%	n	%
At the Beginning	21	95	6	85	27	93
After 3 months	8	36	2	28	10	34
After 6 months	1	4	0	0	1	4
After 12 months	0	0	0	0	0	0
n = number of patients % = percentage of patients						

Following Golimumab administration, three patients experienced episodes of acute rhinitis within the first two months, two patients reported mild sneezing lasting up to three months, and five patients experienced transient generalized weakness immediately after injection. Three patients developed urinary tract infections (UTIs) lasting approximately one month. No serious adverse events were observed. These UTIs were successfully managed, allowing Golimumab therapy to be continued when clinically indicated.

Biological therapy using Secukinumab demonstrated a significant improvement in the progression of axial spondyloarthritis. This was evidenced by a notable reduction in pain intensity, as well as decreased levels of C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) throughout the treatment period. Pain intensity shifted gradually from severe to moderate, and from moderate to light, in both male and female patients (Table 4). At the beginning of biological therapy, 87% of patients (85% males, 88% females) had severe pain intensity, 23% of patients (15% males, 12% females) had moderate pain intensity, and none of them had light pain intensity. After 3 months, 10% of patients (8% males, 12% females) had severe pain intensity, 90% of patients (92% males, 88% females) had moderate pain intensity, and none of the patients had light pain intensity. After 6 months, none of the patients had severe pain intensity, 73% of patients (85% males, 65% females) had moderate pain intensity, and 27% of patients (15% males, 35% females) had light pain intensity. After 12 months, none of the patients had severe or moderate pain intensity, and 100% of patients (100% males, 100% females) had light pain intensity.

The elevated levels of CRP (>6mg/L) also exhibited a gradual fall over the course of therapy (Table 5). At the beginning, 93% of patients (100% males, 88% females) had an increased CRP. After 3 months, 87 % of patients (100% males, 76% females) had high CRP. After 6 months, 50% of patients (46% males, 53% females) had high CRP. After 12 months, only 17% of patients (31% males, 6% females) had elevated CRP.

The elevated ESR declined quickly over the course of therapy (Table 6). At the beginning, 100% of patients (100% males, 100% females) had high ESR. After 3 months, only 40% of patients (31% males, 47% females) had high ESR. After 6 months, just 13% of patients (15% males, 12% females) had high ESR. After 12 months, just 7% of patients (8% males, 6% females) had high ESR.

Table 4 . Amount (%) of patients by Pain Intensity With Axial Spondyloarthritis (Secukinumab)

Course of Therapy	Light Pain						Moderate Pain						Severe Pain					
	Male		Female		Total		Male		Female		Total		Male		Female		Total	
At the Beginning	0%	0	0%	0	0%	0	15%	2	12%	2	23%	4	85%	11	88%	15	87%	26
After 3 months	0%	0	0%	0	0%	0	92%	12	88%	15	90%	27	8%	1	12%	2	10%	3
After 6 months	15%	2	35%	6	27%	8	85%	11	65%	11	73%	22	0%	0	0%	0	0%	0
After 12 months	100%	13	100%	17	100%	30	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0

Table 5. Amount (%) of patients by Levels of CRP (>6 Mg/L) (Secukinumab)

	Beginning		After 3 Months		After 6 Months		After 12 Months	
	N	%	N	%	N	%	N	%
Male	13	100%	13	100%	6	46%	4	31%
Female	15	88%	13	76%	9	53%	1	6%
Total	28	93%	26	87%	15	50%	5	17%

Table 6. Amount (%) of patients by Levels of ESR (>22mm/Hr) (Secukinumab)

	Beginning		After 3 Months		After 6 Months		After 12 Months	
	N	%	N	%	N	%	N	%
Male	13	100%	4	31%	2	15%	1	8%
Female	17	100%	8	47%	2	12%	1	6%
Total	30	100%	12	40%	4	13%	2	7%

When comparing Golimumab and Secukinumab with respect to reductions in pain intensity over time, several key observations were identified:

- Both treatments eliminate severe pain by six months.
- Initially, 83% of patients treated with Golimumab experienced severe pain, compared to 87% of those treated with Secukinumab.
- Secukinumab reduces moderate pain more rapidly than Golimumab.
- At twelve months, 17% of patients using Golimumab still report experiencing moderate pain, while Secukinumab has successfully reduced moderate pain to 0%.
- By twelve months, Secukinumab achieves a 100% reduction in light pain.
- In contrast, Golimumab reaches an 83% reduction in light pain, with some patients still experiencing moderate pain (Table 7).

Table 7. Amount (%) of patients by Pain intensity (Golimumab V.S. Secukinumab)

Time point	Light pain (%)		Moderate pain (%)		Severe pain (%)	
	Golimumab	Secukinumab	Golimumab	Secukinumab	Golimumab	Secukinumab
At the beginning	0	0	17	13	83	87
After 3 months	14	0	65	90	21	10
After 6 months	31	27	69	73	0	0
After 12 months	83	100	17	0	0	0

In comparing the effects of Golimumab and Secukinumab on C-reactive protein (CRP) levels, the following findings were observed:

- Golimumab demonstrated a stronger long-term reduction in CRP levels, decreasing to 10% compared with 17% for Secukinumab.
- Secukinumab showed a slightly smaller initial decrease at 3 months, dropping from 93% to 87%.
- At six months, the difference between the two treatments was reduced, with Golimumab achieving a 55% reduction and Secukinumab a 50% reduction.
- At twelve months, Golimumab remained more effective, with CRP levels nearly normalized at 10%, whereas Secukinumab achieved a reduction to 17% (Table 8).

Table 8. Comparison of levels of CRP: Golimumab V.S. Secukinumab

Time Point	Golimumab (CRP >6 mg/L)	Secukinumab (CRP >6 mg/L)
At the Beginning	**100%** of patients	**93%** of patients
After 3 Months	**96%** (↓4%)	**87%** (↓6%)
After 6 Months	**55%** (↓45%)	**50%** (↓43%)
After 12 Months	**10%** (↓90%)	**17%** (↓76%)

Comparison of Golimumab and Secukinumab in terms of erythrocyte sedimentation rate (ESR) reduction yielded the following results:

- Both treatments significantly reduce ESR levels over time.
- Golimumab completely eliminates elevated ESR levels by 12 months, with 0% of patients still exhibiting high ESR. In contrast, 7% of patients treated with Secukinumab still have elevated ESR after the same period.
- At six months, Golimumab shows a slightly better reduction in ESR levels compared to Secukinumab, with reductions of 4% and 13%, respectively.
- By the 6th month, both treatments achieve a similar decrease in ESR levels, approximately 60% (Table 9).

Table 9. Comparison of levels of ESR: Golimumab V.S. Secukinumab

Time Point	Golimumab (ESR >22mm/hr)	Secukinumab (ESR >22mm/hr)
At the Beginning	**93%** of patients	**100%** of patients
After 3 Months	**34%** (↓59%)	**40%** (↓60%)
After 6 Months	**4%** (↓89%)	**13%** (↓87%)
After 12 Months	**0%** (↓100%)	**7%** (↓93%)

Discussion. The results of our study indicated that treatment with Golimumab and Secukinumab was associated with a reduction in pain intensity. Both medications effectively reduced pain levels from severe to moderate and from moderate to light in both males and females over the course of therapy, evaluated every three months. Secukinumab appeared to be more effective, achieving 100% light pain relief by 12 months, while Golimumab left 17% of patients experiencing moderate pain. Both medications significantly reduced ESR and CRP levels, but Golimumab showed a slightly better effect on ESR, normalizing it completely by the 12-month mark. Although Secukinumab may provide faster and more complete pain relief, Golimumab demonstrated a more gradual improvement over time.

Golimumab was associated with minor side effects, including acute rhinitis, sneezing, general weakness, and urinary tract infections. However, none of these side effects were serious enough to discontinue treatment. On the other hand, Secukinumab was generally well-tolerated and demonstrated long-term efficacy and safety in managing axial spondyloarthritis (AS). These findings suggest that we have gained improved control over the body's autoimmunity.

Conclusion. Biological therapy with Golimumab as well as Secukinumab has significantly enhanced the quality of life for patients by improving mobility, flexibility, and helping to prevent complications related to internal organs. Both medications are effective in reducing pain intensity, CRP and ESR. Secukinumab still leaves 7% of patients with elevated ESR at the 12-month mark. Golimumab appears to have a slightly better effect on ESR reduction compared to Secukinumab at the 12-months mark. Golimumab reported minor side effects such as acute rhinitis, sneezing, general weakness, and urinary tract infections However, none of these adverse events were severe enough to necessitate

discontinuation of treatment. Secukinumab was generally well tolerated and demonstrated sustained long-term efficacy and safety in patients with axial spondyloarthritis. Secukinumab may be the better choice for complete and faster pain relief in axial spondyloarthritis, while Golimumab is also effective, with slightly better control over ESR levels and a slower but consistent improvement in pain relief. This innovative approach to managing axial spondyloarthritis can help patients achieve a stable remission period and alleviate the associated symptoms. Both medications significantly reduce ESR and CRP levels, but Golimumab appears to have a slightly better effect on ESR, normalizing it completely by 12 months. Secukinumab may provide quicker and more complete relief in terms of pain reduction, while Golimumab shows a more gradual improvement over time. Early diagnosis and treatment of axial spondyloarthritis is a prerequisite for stable and long-term remission of the disease.

References:

1. Tsintsadze, N., Kakhidze, I., Kakabadze, N., Nein, C., Artmeladze, M., Verdzadze, A., … Saginadze, L. (2024). Treating Ankylosing Spondylitis of Patients in Adjara Region: Why Biological Therapy?. *Experimental and Clinical Medicine Georgia*, (5), 134–140. https://doi.org/10.52340/jecm.2024.05.21
2. Korotaeva T, Dina O, Holdsworth E, et al. Investigating diagnosis, treatment, and burden of disease in patients with ankylosing spondylitis in Central Eastern Europe and the United States: a real-world study. Clin Rheumatol. 2021 Dec;40(12):4915-4926. doi: 10.1007/s10067-021-05864-8. Epub 2021 Jul 28. Erratum in: Clin Rheumatol. 2022 Apr;41(4):1269. doi: 10.1007/s10067-022-06069-3. PMID: 34319479; PMCID: PMC8794925.
3. Aboobacker S, Kurn H, Al Aboud AM. Secukinumab. [Updated 2023 Jun 20]. In: StatPearls. Treasure Island (FL): StatPearls Publishing; 2025 Jan. https://www.ncbi.nlm.nih.gov/books/NBK537091/
4. Novartis. (2017, March 21). Novartis' Secukinumab is First and Only IL-17A Inhibitor to Potentially Modify the Course Of Psoriasis. Retrieved from: https://www.novartis.com/ph-en/news/media-releases/novartis-secukinumab-first-and-only-il-17a-inhibitor-potentially-modify-course-psoriasis
5. Koenders MI, van den Berg WB. Secukinumab for rheumatology: development and its potential place in therapy. *Drug Des Devel Ther*. 2016;10:2069-2080. doi:10.2147/DDDT.S105263
6. Novartis. (2017, June 15). Novartis' Secukinumab Shows Sustained Improvements In Signs And Symptoms For Both AS and Psa In Up To 80% of Patients at 3 Years. Retrieved from: https://www.novartis.com/ph-en/news/media-releases/novartis-secukinumab-shows-sustained-improvements-signs-and-symptoms-both-and-psa-80-patients-3-years
7. Blair HA. Secukinumab: A Review in Ankylosing Spondylitis [published correction appears in Drugs. 2019 Mar; 79(4):445. doi: 10.1007/s40265-019-01089-x.]. *Drugs*. 2019; 79(4):433-443. doi:10.1007/s40265-019-01075-3
8. J. Sieper, "Management of ankylosing spondylitis/axial spondyloarthritis," Rheumatology: Sixth Edition, vol. 2–2, pp. 970–985, Jan. 2015, doi: 10.1016/B978-0-323-09138-1.00118-2.
9. S. Ramiro et al., "ASAS-EULAR recommendations for the management of axial spondyloarthritis: 2022 update," Ann Rheum Dis, vol. 82, no. 1, 2022, doi: 10.1136/ard-2022-223296.
10. S. Kiwalkar, A. Deodhar, and J. Sieper, "Treatment Guidelines for Axial Spondyloarthritis," Axial Spondyloarthritis, pp. 243–258, Jan. 2019, doi: 10.1016/B978-0-323-56800-5.00016-3.
11. M. M. Ward et al., "2019 Update of the American College of Rheumatology/Spondylitis Association of America/Spondyloarthritis Research and Treatment Network Recommendations for the Treatment of Ankylosing Spondylitis and Nonradiographic Axial Spondyloarthritis," Arthritis and Rheumatology, vol. 71, no. 10, 2019, doi: 10.1002/art.41042.

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RESULTS OF TREATMENT BY DIFFERENT BIOLOGICAL MEDICATIONS OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS IN THE ADJARA REGION

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SUMMARY

Background: Ankylosing Spondylitis (AS) is a chronic autoimmune inflammatory disease, that primarily affects the axial (central) skeleton of the human body. It can lead to partial or complete fusion and rigidity of the spine. Typically, Ankylosing Spondylitis begins in late adolescence or middle age, making it important to manage the condition effectively. In the past, Ankylosing Spondylitis was considered to have a poor prognosis. Delayed diagnosis is associated with more functional impairment, higher healthcare costs, and worse quality of life and work productivity outcomes in patients with AS. However, recent advancements in research have led to the development of a highly effective treatment known as biological therapy.

Aim of Study: Outcomes comparison of the axial spondylarthritis treatment using two different biological Medications and evaluation the of the biological treatment outcomes in patients who received the tumor necrosis factor (TNF) inhibitor (Golimumab) and in patients who received the interleukin-17A (IL-17A) inhibitor (Secukinumab). The study was focused on the effectiveness of these therapies in managing axial spondyloarthritis in the Adjara Region.

Materials and Methods: We conducted two studies. Both studies aimed to assess treatment effectiveness on disease symptoms and inflammatory markers with axial spondyloarthritis patients at the Rheumatology Department of SoloMed Clinic, Batumi, Georgia. The first study, dated from October 2022 to December 2023, involved 29 patients (22 males, 7 females) aged 24–65 years, who received Golimumab, a TNF-α inhibitor. Each patient was given 50 mg of Golimumab subcutaneously once a month. In the second study (2023–2024), 30 patients (13 males, 17 females) aged 22–72 years were examined. 150 mg IL-17A inhibitor Secukinumab subcutaneously once a week for five weeks at the beginning and then once a month for a year were prescribed for them. We evaluated pain intensity, C-reactive protein (CRP), and erythrocyte sedimentation rate (ESR) at baseline and at three, six, and twelve months in both studies.

Results: Biological therapy with Golimumab demonstrated marked improvement in axial spondyloarthritis symptoms. It significantly reduced pain intensity, C-reactive protein (CRP), and erythrocyte sedimentation rate (ESR). After 12 months of treatment, only 22% of males had moderate pain, while all females reported light pain. Elevated CRP declined from 100% at baseline to 9% in males and 8% in females. Elevated ESR decreased from 95% in males and 85% in females to a single patient overall. Side effects were mild. Only transient rhinitis, sneezing, weakness, and short-term urinary tract infections were noted. No serious complications occurred. Treatment with Secukinumab also caused substantial clinical and biochemical improvement. At the beginning of treatment,87% of patients had severe pain, and 23% had moderate pain, whereas after 12 months, all patients reported only light pain and elevated CRP decreased from 93% to 17%. ESR fell from affecting nearly all patients to just 7%. Both agents led to significant and sustained reductions in inflammation and symptoms. This confirms their therapeutic efficacy and safety in axial spondyloarthritis.

Conclusion: Biological therapy with Golimumab and Secukinumab markedly improves quality of life in patients with axial spondyloarthritis by enhancing mobility and reducing inflammation. Both agents effectively lower pain intensity and normalize inflammatory markers. Secukinumab achieves faster and complete pain relief, with all patients reporting light pain at 12 months, while Golimumab shows stronger normalization of ESR and consistent CRP reduction. Both treatments are well tolerated, with only mild, transient side effects. Overall, Secukinumab appears superior for rapid symptom relief, whereas Golimumab offers slightly better long-term control of inflammatory parameters. Both represent effective

and safe therapeutic options for sustained remission in axial spondyloarthritis. Early diagnosis and treatment of axial spondyloarthritis is a prerequisite for stable and long-term remission of the disease.

Keywords: Axial Spondyloarthritis, Biological Therapy, Golimumab, Secukinumab