



Dr. Mileika klinika

Private Practice
in Trichology and Dermatovenerology

Use of Alopel[®] for Hair Loss Treatment



June, July 2014



Dr. Mileika klinika

Private Practice
in Trichology and Dermatovenerology

Clinical Trial

June, July 2014

Use of Alopel[®] for hair loss treatment

T. Mileika^{1*}, R. Churilova¹

¹ Doctor Mileika's Clinic Ltd, Private Practice in Trichology and Dermatovenerology, Riga, Latvia.

* Correspondence: T. Mileika. E-mail: tmileika@gmail.com

Abstract

Background: A clinical trial was conducted to test the effectiveness of Alopel[®] – a hair product for the treatment of *androgenetic alopecia* and *alopecia areata* which reduces the production of dihydrotestosterone by inhibiting type I and type II 5 α -reductase, and improves blood flow to the hair follicle.

Objectives: To reveal the effectiveness of use of the topical medication against hair loss Alopel[®] and to establish the period during which positive results can be noted.

Methods: A group of patients participating in the clinical trial consisted of 21 women aged 25-75 years with complaints about hair loss and thinning of the hair with different duration of the disease, and diagnosed with alopecia areata or androgenetic alopecia. Testing of Alopel[®] was being conducted in the course of two months. Patients rubbed Alopel[®] into the scalp twice a day. Afterwards, hair shaft and hair root thickness was measured using the micro-videodiagnostic method ('Hair Line 1.0' hair diagnostic programme).

Results: Already after one month of the regular external use of Alopel[®] test results showed an increase in the thickness of the hair shafts and hair roots.

Conclusion: As a result of the regular topical treatment with Alopel[®], hair growth was improved, hair loss was reduced, and the hair became thicker.

Conflicts of interest

None declared.

Funding sources

None declared.

Introduction

Hair diseases are a rather widespread pathology and constitute approximately 4% of the total number of skin diseases¹. The reasons for hair loss may be different, for instance, immunologic diseases, nervous system diseases, gastrointestinal tract diseases, hormone imbalance, lack of micro-elements, parasitic infections, external impacts (colouring, decolouring, drying), etc.

In case of alopecia areata and androgenetic alopecia, baldness is to a great extent caused by two key factors: androgen receptors (located in the dermal papillae) and the activity of androgen converting enzymes (5 α -reductase) of type I and type II, aromatase and 17-hydroxysteroid-dehydrogenase in different parts of the scalp. 5 α -reductase induces the process of transforming testosterone into the active metabolite – dihydrotestosterone. Aromatase converts androstenedione to estrone and testosterone to estradiol. An increased activity of 5 α -reductase is noted in the bald spots.

The hair follicle as such is a unique micro-organ playing the most important role in the process of hair growth and disorders thereof¹. The hair follicle is generously supplied with blood vessels which in humans reach the dermal papilla and contribute to the nourishment of the hair matrix. For the hair to grow well, the hair follicle should be effectively enriched with nutrients. Therefore, simultaneously with the pathogenetic treatment, local treatment using topical medications is recommended.

Methods

A group of patients participating in the clinical trial consisted of 21 women aged 25-75 years with complaints about hair loss and thinning of the hair with different duration of the disease, and diagnosed with alopecia areata or androgenetic alopecia. A trichogram (a diagnostic method for hair loss) showed hair growth in the telogene phase and miniaturization of hair follicles which leads to the decrease in the hair shaft diameter. Patients used the topical medication against hair loss Alopel®.

Alopel® is a hair product for the treatment of *androgenetic alopecia* and *alopecia areata*. It makes use of the latest advances in molecular activation

in order to energise the hair and the scalp naturally at the same time reducing the harmful effects of oxidative stress generated in the hair follicle and the scalp.

Alopel® is a natural product without contraindications or side effects. Among its components of plant origin are:

- Arnica, rosemary, cress, lemon, ivy, nasturtium, sage, pine, white of nettles, chamomile, burdock, calendula.
- Arnica, rosemary, cress, lemon, ivy, nasturtium (prevent hair loss).
- Rosemary, sage, pine, white of nettles (control sebum secretion on the scalp).
- Rosemary, chamomile, sage, pine, burdock, lemon, calendula, white of nettles (control dandruff on the scalp).
- Oleanolic Acid (extracted from the root of *Lovely Hemsleya*) and Biochanin A (extracted from red clover) which are powerful inhibitors of type I and type II 5 α -reductase. Oleanolic Acid reduces the production of dihydrotestosterone by inhibiting type I and type II 5 α -reductase, contributes to the termination of hair follicle miniaturization which results in the increased hair shaft and hair root diameter, whereas Biochanin A decreases the production of IL-8 which reduces inflammation of the scalp.
- Apigenin (a flavonoid extracted from citrus) which significantly improves blood flow to the hair follicle.
- Alopel® also contains vitamin-bearing Matrikine (Biotinyl-Gly-His-Lys vitamin H) and Acetyl Tetrapeptide which adhere specifically to the zones of cell proliferation, i.e. the epithelial root sheath and the dermal papilla, and help combat ageing of the hair and maintain the hair in the anagen phase as well as improve the quality of the epithelial root sheath and stimulate production of anchor molecules.
- Patients applied Alopel® to the clean scalp and massaged it in lightly until fully absorbed twice a day, without washing it out. The clinical trial was being conducted in the course of two months (*June, July 2014*) with the participation of a dermatologist and trichologist, and a laboratory technician.

Objectives

The objectives of the clinical trial were: to reveal the effectiveness of use of the topical medication against hair loss Alopel® and to establish the period during which positive results can be noted. To achieve the above-mentioned objectives, the following factors were assessed:

- Hair shaft diameter.
- Hair root diameter.
- Increased hair volume.
- Improvement in the visual appearance of the hair.

The conclusion was based on the results as follows:

- 1) Anamnesis.
- 2) Trichogram. A trichogram is an objective method for diagnosing hair loss (microscopic examination method), evaluating the percentage of hair roots in the growing phase to the hair in the resting phase. This method makes it possible to find the reason of hair loss, to diagnose pathologic changes in the hair root (root dystrophy and root atrophy), to identify the hair shaft pathology and to evaluate the visual appearance of the hair.
- 3) Measurement of the hair diameter (diameter of the root, diameter of the shaft).
 - The hair root diameter is measured in the widest part of the root, in arbitrary units.
 - The hair shaft diameter is measured at a distance of 20-25 arbitrary units from the border of the hair root, in arbitrary units.

To measure both parameters, the micro-video-diagnostic method (Hair Line 1.0 hair diagnostic programme) was used. The measurement was performed in arbitrary units since there is not a fixed metric system conversion factor. For diagnostics, hairs were selected from two areas: frontoparietal and occipital (10 hairs from every area). Then, said hairs were separated according to the phases of loss including dystrophic and atrophic hairs. For more convenient calculation of the results (according to the hair root and hair shaft diameter), the average indices of every test participant were calculated.

Monitoring was conducted:

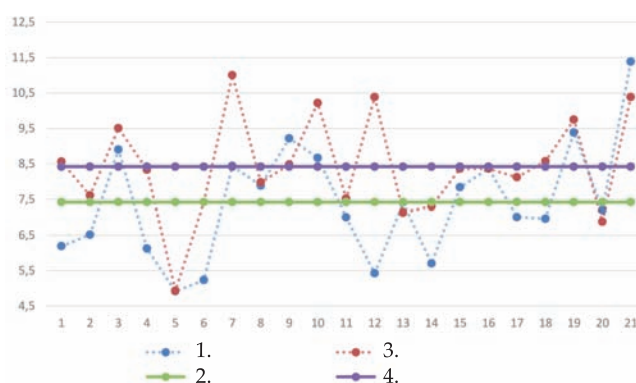
- Before the beginning of the clinical trial.
- After one month.
- After two months.

Results

After one month

1) Increased thickness of the hair shaft was noted by 16 out of 21 patients – 76%.

Diagram 1. Hair shaft initial measurement and one month after.



1. First measurement
2. Second measurement
3. Average (Initial)
4. Average (1 month after)

Diagram 2. Hair shaft initial measurement and one month after.

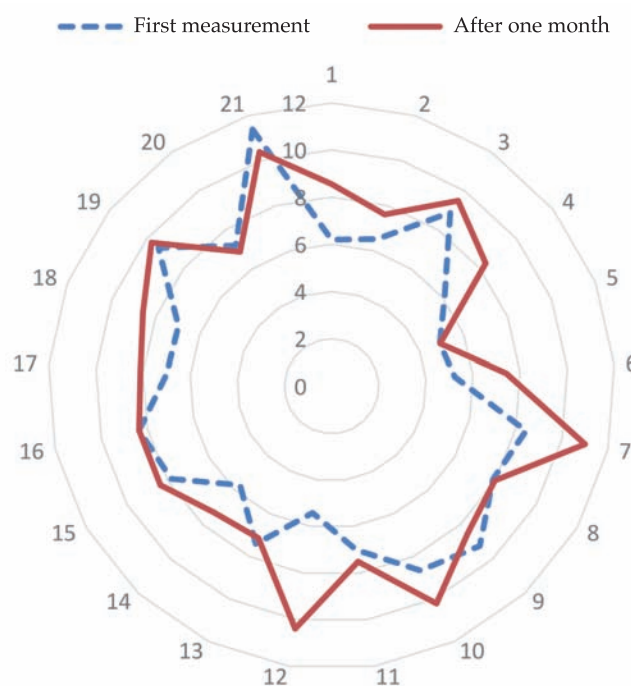
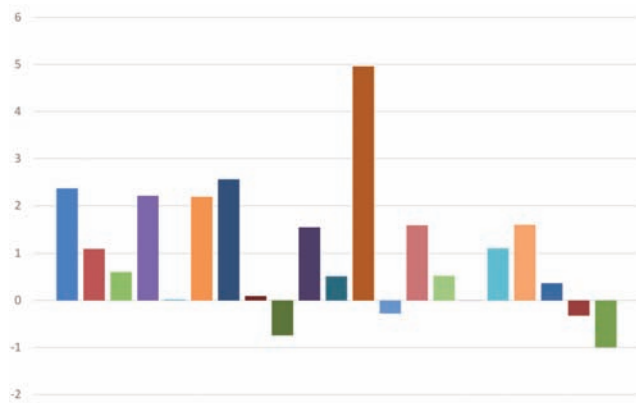
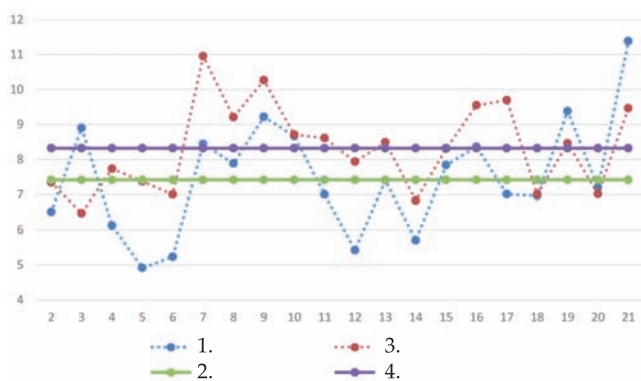


Figure 1. Increase in hair shaft size (1 month period).



2) Increased thickness of the hair root was noted by 12 out of 21 patients – 57%.

Diagram 3. Hair root initial measurement and one month after.



1. First measurement 2. Second measurement
3. Average (Initial) 4. Average (1 month after)

Diagram 4. Hair root initial measurement and one month after.

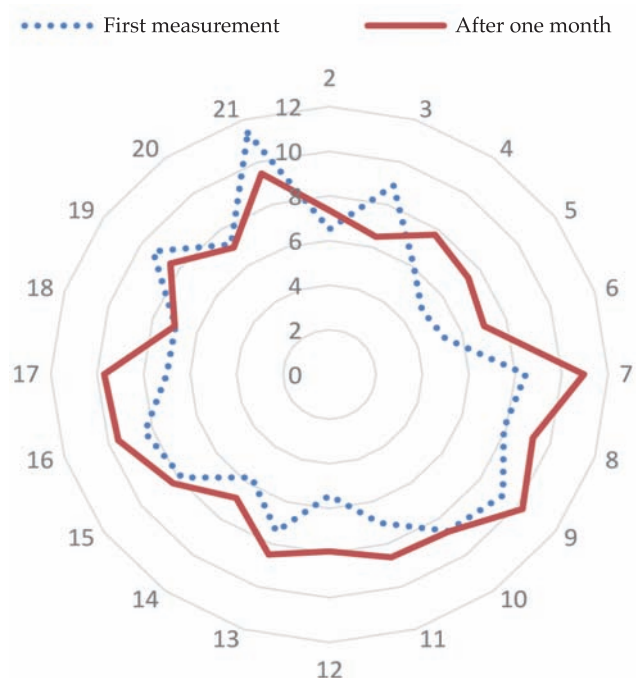


Figure 2. Increase in hair root size (1 month period).

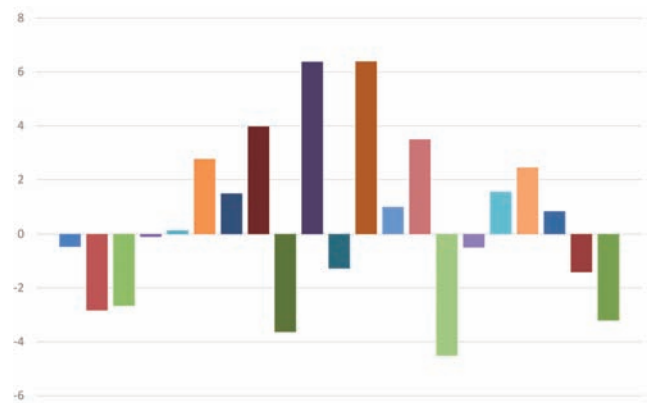
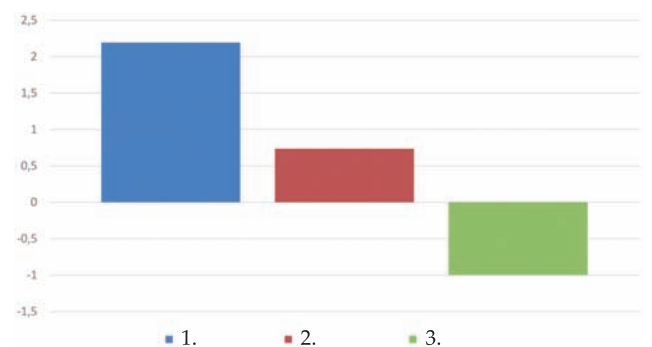
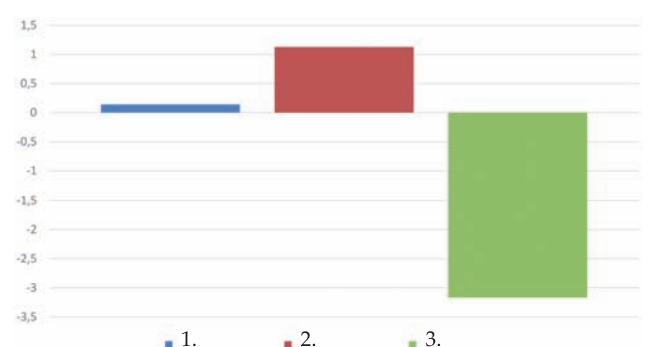


Figure 3. Average increase in hair shaft size among groups (divided by initially measured size in smallest, average and largest) - 1 month period.



1. Smallest - 5 pers. 2. Average - 15 pers.
3. Largest - 1 pers.

Figure 4. Average increase in hair root size among groups (divided by initially measured size in smallest, average and largest) - 1 month period.



1. Smallest - 5 pers. 2. Average - 15 pers.
3. Largest - 1 pers.

After two month

1) Increased thickness of the hair shaft was noted by 16 out of 20 patients – 80%.

1 out of 21 patients could not participate in further clinical trial due to subjective reasons.

Diagram 5. Hair shaft initial measurement and two months after (20 patients out of 21).

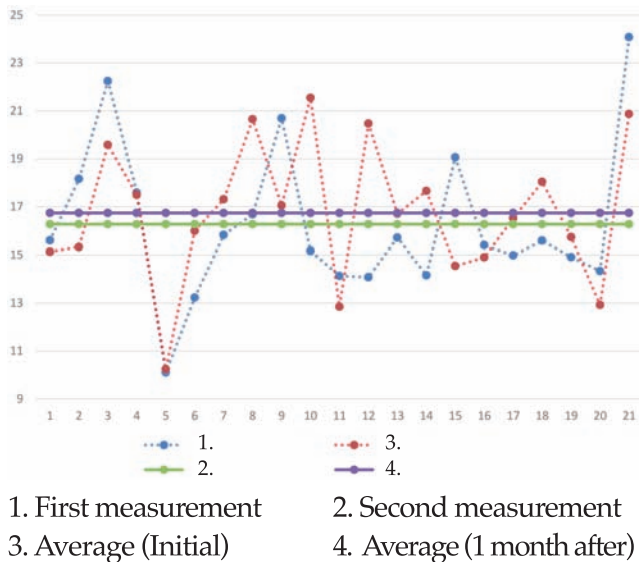


Diagram 6. Hair shaft initial measurement and two months after (20 patients out of 21).

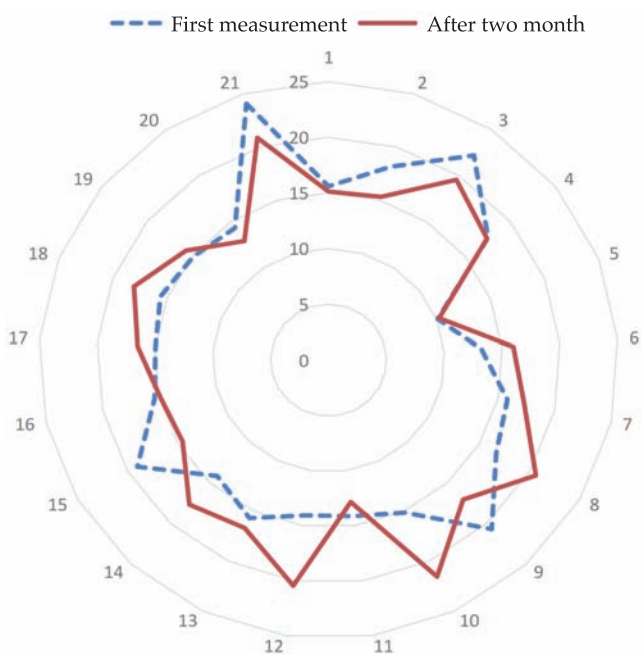
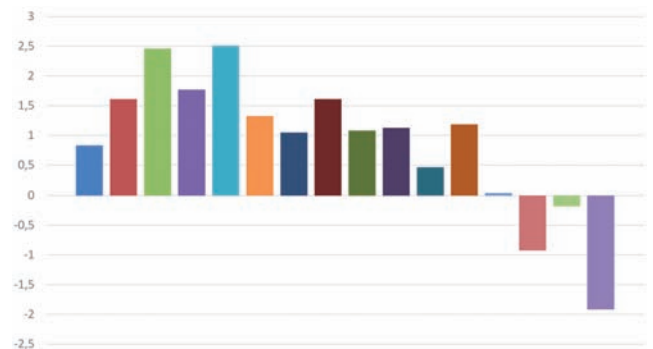
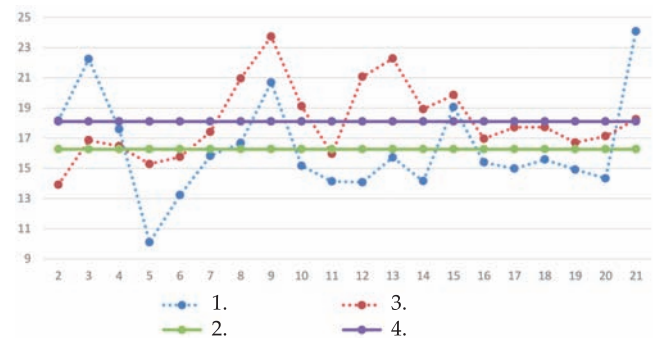


Figure 5. Increase in hair root size (2 months period) (20 patients of 21).



2) Increased thickness of the hair root was noted by 16 out of 20 patients – 80%.

Diagram 7. Hair root initial measurement and two months after (20 patients out of 21).



1. First measurement 2. Second measurement
3. Average (Initial) 4. Average (2 month after)

Diagram 8. Hair root initial measurement and two months after (20 patients out of 21).

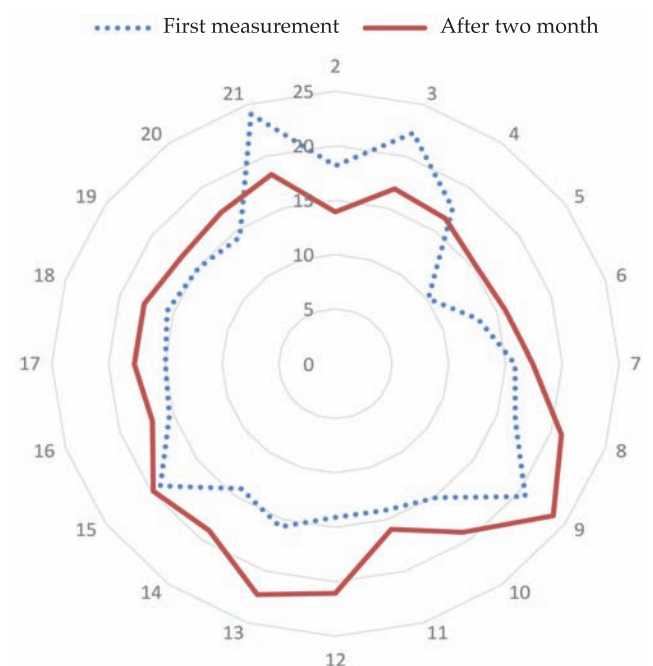


Figure 6. Increase in hair root size (2 months period) (20 patients of 21).

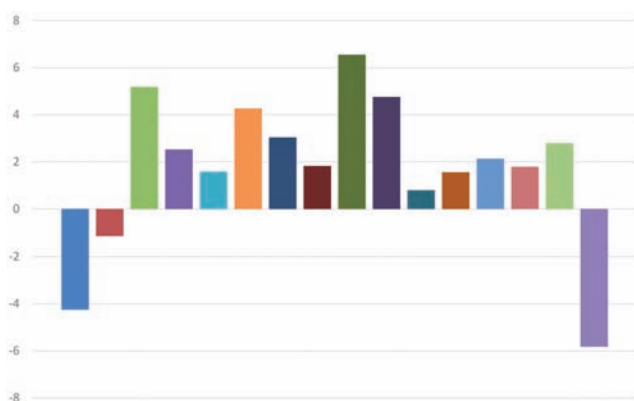
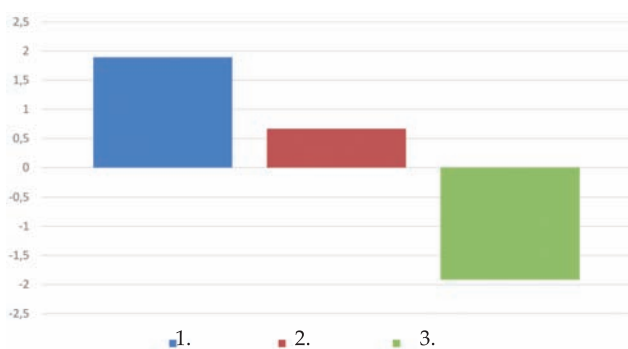
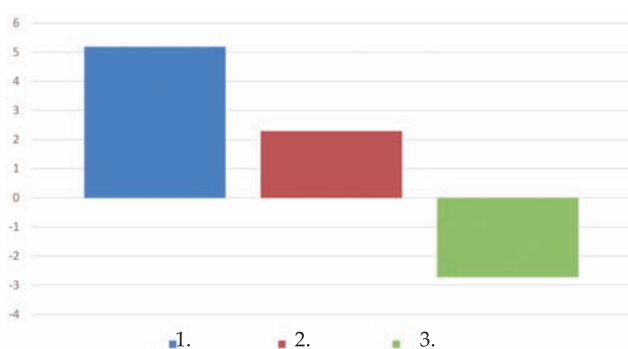


Figure 7. Average increase in hair shaft size among groups (divided by initially measured size in smallest, average and largest) - 2 month period.



1. Smallest - 5 pers. 2. Average - 15 pers.
3. Largest - 1 pers.

Figure 8. Average increase in hair root size among groups (divided by initially measured size in smallest, average and largest) - 2 month period.



1. Smallest - 5 pers. 2. Average - 15 pers.
3. Largest - 1 pers.

Conclusion

The formula of Alopel® promotes better blood supply to the hair follicle in the growing phase (anagen) and helps slow down the degradation of blood vessels. It strengthens the epithelial and vascular proliferation, prolongs the anagen phase of the hair growth cycle. Cells are better supplied with nutrients. A significant clinical improvement is noted. 76%-80% of patients reported thickening of the hair diameter. The hair became thicker. The hair structure was improved. Now, the hair falls out less than before and grows better. It was noted that Alopel® improves the visual appearance of the hair, gives lustre to it, ensures easy combing, and protects the hair shaft from further damage.

The therapeutic effect is noticeable after just one month of the regular external use of Alopel®.

Objectively (according to the results of a trichogram and hair diameter measurement), improvement in the structure and thickness of the hair (roots, shafts) is already noted towards the end of the first month. Increased thickness of the hair shaft (in 76% of patients) is especially noted after just one month, whereas after two months, increased thickness of the hair shafts and roots is noted in 80% of patients. The stability of positive results is noted if said product is used on a regular basis. Alopel® is well tolerated by the skin. Allergic reactions were not noted. It is easy to use.

Alopel® is recommended as a combination therapy for hair loss as well as to improve micro-circulation, hair growth, hair structure, increase hair thickness which is confirmed by the objective studies. The advantage of any method of topical treatment consists in the fact that these methods are practically safe for the patient in contrast to the general methods of long-term therapy (glucocorticoids, etc). To conclude, we would like to emphasize that the hair loss therapy must be combined since it reduces the duration of treatment, gives more stable results, and improves the quality of the patients' life.

Table 1. Summary table of all measurement results.

No.	Codename	Initial Measurement		After 1 month		After 2 months	
		Shaft	Root	Shaft	Root	Shaft	Root
1	LH	7,80	14,65	9,56	15,81		
-	-	4,95	15,09	6,71	13,48	-	-
-	-	5,83	17,05	9,41	16,1	-	-
2	IP	6,88	15,3	8,23	14,93	6,02	10,67
-	-	7,00	19,95	7,07	18,01	8,02	19,02
-	-	5,66	19,23	7,52	13,04	7,99	12,04
3	IV	7,91	14,77	10,47	22,15	7,08	10,96
-	-	10,40	26,53	11,43	25,52	4,37	15,48
-	-	8,40	25,43	6,62	11,07	7,98	24,15
4	OM	6,25	17,38	7,79	23,23	7,60	20,87
-	-	6,72	20,38	8,84	14,25	7,31	14,63
-	-	5,41	15,01	8,38	14,98	8,30	13,9
5	LS	5,94	14,38	5,06	11,86	5,02	10,06
-	-	6,90	12,03	5,96	14,85	9,65	18,53
-	-	1,91	3,90	3,78	4,02	7,46	17,27
6	LO	5,38	12,38	7,53	21,75	5,86	12,73
-	-	4,63	16,11	9,03	12,01	8,22	16,34
-	-	5,69	11,19	5,71	4,22	6,92	18,20
7	NM	6,67	14,94	9,81	23,61	10,77	17,41
-	-	11,98	24,15	13,00	18,2	11,50	-
-	-	6,68	8,38	10,2	10,11	10,58	-
8	TV	7,27	19,5	7,28	21,6	9,92	24,06
-	-	7,38	18,48	7,56	20,15	8,25	12,53
-	-	9,01	12,06	9,09	20,2	9,46	26,27
9	TL	7,89	18,13	7,33	17,9	9,65	26,44
-	-	9,03	20,86	10,02	13,12	9,98	22,64
-	-	10,74	23,07	8,08	20,14	11,17	22,10
10	SL	8,13	15,78	11,82	24,33	8,38	13,35
-	-	8,59	16,82	10,52	23,4	7,89	23,74
-	-	9,28	12,90	8,32	16,90	9,86	20,25
11	FT	6,28	11,34	7,08	13,04	6,78	16,99
-	-	7,060	12,80	8,01	14,06	9,18	15,93
-	-	7,13	18,25	7,46	11,46	9,88	14,96
12	AA	5,31	9,50	12,9	26,90	8,89	26,68
-	-	4,76	12,91	10,96	22,49	7,27	15,13
-	-	6,21	19,83	7,30	12,01	7,65	21,39
13	EI	9,57	20,25	7,79	19,65	8,63	23,96
-	-	7,52	10,86	9,02	18,58	9,22	19,94
-	-	5,14	16,04	4,59	11,88	7,62	22,92
14	SE	5,21	2,55	6,56	12,45	6,88	23,33
-	-	5,71	21,76	6,97	18,96	7,52	14,51
-	-	6,21	8,16	8,38	21,55	6,10	-
15	KZ	7,89	18,66	8,09	19,02	9,01	21,04
-	-	7,13	11,63	7,90	14,01	7,90	19,52
-	-	8,50	26,89	9,10	10,60	8,01	19,01
16	RC	7,54	14,77	7,95	15,08	9,00	18,03
-	-	8,55	15,99	8,82	13,80	9,92	16,95
-	-	9,01	15,43	8,32	15,82	9,73	15,9
17	BS	5,77	14,23	9,01	20,02	10,87	16,97
-	-	9,17	21,75	6,23	19,70	8,76	16,93
-	-	6,09	8,96	9,12	9,85	9,46	19,25
18	KN	9,61	8,12	8,31	20,15	7,03	14,13
-	-	5,21	6,29	5,85	12,77	7,07	20,59
-	-	6,11	2,35	11,56	21,18	6,92	18,46
19	BJ	6,78	11,72	12,1	19,80	9,57	24,01
-	-	13,87	21,01	9,18	13,40	10,61	18,86
-	-	7,50	12,01	7,96	14,01	5,20	7,25
20	LT	8,84	14,65	7,8	12,80	5,90	13,76
-	-	6,93	16,09	6,82	15,90	6,32	17,27
-	-	5,84	12,26	6,02	10,06	8,84	20,35
21	KL	9,79	28,29	12,93	21,93	10,44	19,74
-	-	11,32	21,68	7,68	16,66	10,16	17,96
-	-	13,04	22,26	10,55	24,02	7,80	17,05

Test participants noted that the visual appearance of their hair was improved.

Subjectively, there was a reduction in the number of complaints about hair loss. The psychoemotional state of test participants was also improved.

Reference

1. Adaskevich, V. P., Myadelets, O. D., Tikhonovskaya, I. V., *Alopecia (Library of a Practitioner)*, Moscow, Meditsina, 2000, pp. 3, 13.
 2. Camacho, Francisco M, Randall, Valerie A, Price, Vera H, *Hair and Its Disorders. Biology, Pathology and Management*, Martin Dunitz Ltd, 2000.
 3. Tosti, Antonella, Piraccini, Bianca Maria, *Diagnosis and Treatment of Hair disorders (An Evidence-Based Atlas)*, Taylor & Francis 2006.
 4. Olsen, Elise A, *Disorders of Hair Growth: Diagnosis and Treatment*, Mc Graw-Hill, Medical Publishing Division, 2003.
 5. Sokolovsky E. V., Baldness. *Differential diagnosis. Therapy methods*, Series "Library of a dermatovenerologist", issue 7, St. Petersburg: SOTIS, 2003.
-