Clinical experience of using" COLLOST"®

gel for hypersensitive skin and rosacea

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Cosmetologists often hear complaints from patients about excessive skin sensitivity, enlarged blood vessels, and redness in the slightest stressful situations. Many people's skin does not tolerate heat, cold, and cosmetics well. In 1977, A. Kligman proposed calling this type of people “stingers”. Their skin is characterized as reactive, hyperreactive, sensitive, irritated. Moreover, skin sensitivity increases with age. Sensitive skin is generally free of eruptions. But skin with atopic and seborrheic dermatitis or rosacea may show signs of reactivity. Sensitive skin is more common in women than in men. Skin reactivity is not limited to the face alone: 70 % of patients report reactive skin on the face, hands, scalp, legs, neck, trunk, back and genitals.

Differential diagnostics

In the presence of erythema, sensitive skin should be differentiated from rosacea. The differential diagnosis is the presence or absence of rash, which is most difficult to determine in patients with the initial form of rosacea.

Other signs of rosacea include telangiectasias, edema, plaques, phymatous changes, dry skin, ocular manifestations, and inflammatory lesions such as papules and pustules. Patients may also complain of a burning sensation at the affected skin sites. Rosacea is classified into 5 subtypes: erythematotelangiectatic, papulopustular, phymatous, ocular and granulomatous. Rosacea is considered a genetically determined angioneurosis with changes in the tone of facial vessels. The onset of dermatosis usually occurs at 30–40 years of age and reaches its maximum manifestation by 50 years of age. Recently, rosacea has been diagnosed at a younger age, often against the background of acne. Rosacea is a multifactorial disease. Its development is influenced by internal and external factors.

In the absence of erythema, diagnosis of sensitive skin is simple. But it is important to remember that abnormal sensitivity without objective symptoms may be associated with pathology of small and large nerve fibers or neuropathy due to compression of the spinal cord. Unlike sensitive skin, the anatomical distribution of symptoms in the nervous system pathology is associated with innervation.

Histological examination in sensitive skin rarely demonstrates vascular dilation with inflammatory infiltrate. Overall, there are no histological abnormalities. The barrier function of the skin, which is impaired in some patients, leads to transdermal water loss, which may facilitate contact with trigger factors. However, not all people with sensitive skin have a damaged barrier function. It is assumed that sensitive skin and dry skin are different phenomena, since no association has been found confirming that dry skin and damage to the skin barrier could contribute to skin sensitivity by facilitating contact with trigger factors. On the contrary, skin sensitivity can contribute to dry skin. Dry skin and skin sensitivity may also be the result of a similar pathogenetic mechanism, if both conditions are combined. Regular use of moisturizers is believed to reduce skin sensitivity.

About collagen

Like any protein, collagen functions in the body for a certain time. It is classified as a slowly metabolizing protein. The destruction of collagen fibers is carried out by active forms of oxygen and/or enzymatically (hydrolytically). Native collagen is not hydrolyzed by conventional peptide hydrolases. The main enzyme of its catabolism is collagenase, which breaks down peptide bonds in certain areas of the helical regions of collagen.

Collagen is a part of all tissues that require strength and mechanical support. Collagen fibers intertwine with each other, creating a framework into which new cells can “settle.”

Features of collagen metabolism

In young people, collagen metabolism is intense, but with age it decreases significantly, since in older people the number of cross-links increases, which makes it difficult for collagen to be available for collagenase action. In some cases, collagen synthesis increases significantly. For example, fibroblasts migrate to a healing wound and begin to actively synthesize the main components of the intercellular matrix in this area. The result of these processes is the formation of a connective tissue scar at the site of the wound, containing a large number of randomly located collagen fibrils. Similarly, replacement of dying cells with connective tissue occurs in the liver during cirrhosis, in the walls of arteries during atherosclerosis, and in muscles during their dystrophy.

Ascorbic acid stimulates the synthesis of collagen and proteoglycans, as well as the proliferation of fibroblasts.

Hormones play a special role in regulating collagen synthesis. Glucocorticoids inhibit collagen synthesis, which results in a decrease in the thickness of the dermis.

Collagen synthesis is also influenced by sex hormones, receptors for which are found both in the stroma of the genital organs and in the fibroblasts of other organs and tissues. Synthesis of skin collagen depends on the content of estrogens, the level of which in women begins to decrease from 35–40 years of age. Estrogens control the work of the enzyme collagenase, which breaks down old collagen. Accordingly, with a lack of estrogen, collagenase becomes more active and utilizes not only “old” but also “new” collagen.

"COLLOST"® gel

"COLLOST"® is a medical grade biomaterial, a gel containing type 1 collagen. It is produced using cattle skin. The epidermis, subcutaneous fat layer, all dermal cells and intercellular substance are removed from the skin without destroying the collagen matrix. This allows for the creation of a durable material. Thanks to the unreconstructed form of collagen, COLLOST® has the properties necessary for skin health.

The technology for producing the biomaterial "COLLOST"® was awarded the Grand Gold Medal in the field of medicine at the 23rd International Exhibition of Inventors in Geneva and was awarded a special prize by the jury of the exhibition.

"COLLOST"® is as close as possible in structure to human collagen. It promotes the restoration of the dermis by activating collagenogenesis and improving the dermal characteristics of the skin. The therapeutic effect of the gel injection, in addition to recreating the required volume, is due to the stimulating effect on the development of the body’s own connective tissue. When collagen is administered intradermally, increased fibroblast proliferation and macrophage reaction are observed. As a result of lysis of externally introduced collagen, media are released tors that activate the functional activity of fibroblasts. The effect of collagen is to trigger those natural processes that would proceed more slowly without it.

Preparation and implementation of therapy with COLLOST® gel

When planning the collostotherapy procedure, anamnesis was collected, examination was performed, contraindications were identified, an outpatient card was filled out and voluntary informed consent for the procedure was signed. Before the collostotherapy procedure, patients were photographed. All patients were required to undergo a test in the forearm area 7–14 days before the procedure. This eliminated unwanted risks. All patients had negative test results. Corneometry was also performed and the macrorelief of the skin was measured using the Aramo SG diagnostic device.

Objective. Correction of manifestations of skin hypersensitivity, minimization of skin redness due to the action of various factors (physical, chemical), skin health improvement, obtaining an aesthetic effect (tightening and/or preventing skin sagging).

Patients with signs of hypersensitive skin, with manifestations of rosacea, erythematotelangiectatic rosacea were selected. Since the patients were over 35 years old, they all wanted to tighten their skin.

The procedures were performed on 21 patients aged from 35 to 79 years. Of these, 19 are women and 2 are men. 15 patients had previously received hyaluronic acid injections. 6 patients had never used injection procedures.

Patients were divided into 2 age groups. 1st group: from 35 to 48 years old (a total of 14 people, including 2 men and 12 women, all women were taking hormone replacement therapy).

2nd group: from 48 to 79 years old (6 people in total, all participants were women, none of them were taking hormone replacement therapy). All participants underwent 3 to 5 procedures of COLLOST gel® 7 % in a volume of 1.5 ml at intervals of once every 3–4 weeks. Two patients underwent one procedure each due to the circumstances (change of residence, family circumstances).

Procedure flow

After removing make-up, the facial skin was treated with a 0.05 % solution of chlorhexidine bigluconate. If necessary, topical anesthesia was performed with Emla cream for 30 minutes.

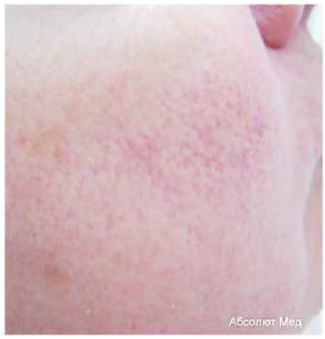
The correction was carried out mainly in the cheek, nasolabial, zygomatic and chin areas. That is, the areas with the greatest manifestations of sensitivity and rosacea were selected. Injections were performed using linear and point injection techniques, intradermally, into the lower-middle layers of the dermis. During the procedure, patients noted a slight feeling of warmth and swelling. After the injections were completed, a light massage was performed using panthenol spray. All patients were given the following recommendations after the intervention: avoid excessive sun exposure, visiting baths and saunas. No other cosmetic procedures were performed between the collostotherapy procedures.

The patients were invited for repeated injections after 3–4 weeks. All patients tolerated both the procedure itself and the post-procedural period well. Immediately after injections, erythema was observed in 100% of cases. Erythema disappeared within 1–2 hours in 2 people (10 %), erythema persisted for 12–24 hours in 10 people (40 %), and up to 2–3 days in 10 people (50 %). One patient noted slight swelling, which lasted up to 2 days. Most patients noted injection marks, ecchymosis and pain at the injection sites, but did not experience any discomfort. As a rule, such manifestations passed within 1–3 days.

Results of the procedures

Patient A., 61 years old. She visited us with complaints about the reactivity of her facial skin to temperature changes and the application of cosmetics, telangiectasia in the facial area, and uneven complexion (pigment). History: osteochondrosis of the cervical-and-collar zone, diseases of the gastrointestinal tract, cardiovascular system. Takes vascular medications. Over the past 8 years, injections of hyaluronic acid (biorevitalization) and phototherapy have been performed periodically.

A course of 5 procedures of "COLLOST"® gel 7 %, 1.5 ml, was prescribed with an interval of once every 3 weeks. The gel was injected using a linear technique into the buccal and zygomatic areas to a depth of 2–3 mm. After the course of procedures, the patient noted that her skin became denser. The pigmentation that was observed in the cheekbone area and telangiectasias in the cheek area became less noticeable. In the patient's words: the skin's reactivity to trigger factors (temperature, application of cosmetics) has changed. The wrinkles in the periorbital area (cheekbone projection) were filled.



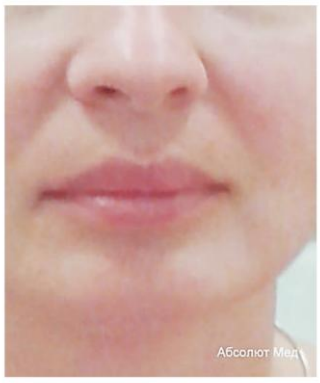
Before treatment.

After treatment.

Patient V., 38 years old. She visited us with complaints of increased sensitivity of my facial skin, redness, and signs of sagging skin. Previously, phototherapy and biorevitalization procedures were performed.

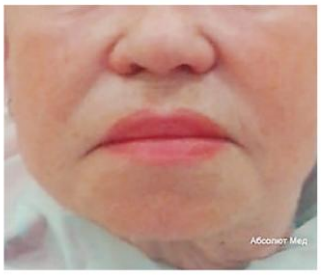
A course of 3 procedures of "COLLOST"® gel 7 %, 1.5 ml, was prescribed with an interval of once every 4 weeks. The gel was injected using a point technique into the cheek, zygomatic, and nasolabial areas. The distance between injections is 0.5–1 cm, the depth of the injections is 2–3 mm.

After a course of procedures, the patient noted that her facial skin had tightened and became less red with temperature changes and the application of cosmetics.



Before treatment.

After treatment.



Before treatment.

After treatment.

Patient G., 79 years old. She visited us to improve the quality of skin, complaining of vascular patterns. Since her youth, she has been regularly taking care of her facial skin both at home and in beauty salons. Periodically undergoes biorevitalization procedures. A course of 3 procedures of "COLLOST"® gel 7 %, 1.5 ml, was prescribed with an interval of once every 4 weeks. The gel was injected using a linear technique to a depth of 2–3 mm into the cheek, zygomatic, and chin areas.

After the course of procedures, the skin became denser and the vascular pattern became less noticeable.

Before treatment.

After treatment.

Patient D., 50 years old. She visited us with complaints of skin sensitivity, facial contours sagging, flabbiness of the chin and neck area, fine vascular network in the cheek area, and pigment inclusions. Periodically attends chemical peeling, biorevitalization and phototherapy procedures.

A course of 3 procedures of "COLLOST"® gel 7 %, 1.5 ml, was prescribed with an interval of once every 4 weeks. The gel was injected using a linear technique to a depth of 2–3 mm. After the course of treatments, the skin acquired a more even tone and skin "sagginess" decreased. The patient notes better tolerance of temperature changes and cosmetics.

Before treatment.

After treatment.

Patient E., 42 years old. She visited us with complaints of skin hypersensitivity when applying cosmetics and to mechanical impact. A course of 5 procedures of "COLLOST"® gel 7 %, 1.5 ml, with an interval of once a month was prescribed. The gel was injected using linear and point techniques, primarily into the buccal area. After a course of procedures, a significant improvement in skin reactivity is noted.

Conclusions

1. After a course of procedures, all patients noted less reactivity of vascular manifestations on the face in response to temperature changes, application of cosmetics, and exposure to physical factors.

2. The skin tone of all patients became more even, pigment spots became lighter without additional exfoliating agents. Most likely, this effect is associated with the acceleration of skin renewal against the background of additional reserves.

3. Against the background of changes in the quality indicators of the skin, the vascular network became less noticeable.

4. All patients noted a lifting effect to a greater or lesser extent due to skin tightening.

5. Instrumental study data showed a significant improvement in the macrorelief of the skin in the areas above the injections of COLLOST® gel. The amount of sebum on the skin surface did not change.

6. All patients expressed a desire to attend maintenance collostotherapy procedures, and subsequently a repeat course.

Conclusion

1. The "COLLOST"® gel is as close as possible in structure to human collagen, promotes restoration of the dermis by activating collagenogenesis and improving the dermal characteristics of the skin.

2. The COLLOST® material is completely and promptly bioresorbed, allowing for hypercorrection with subsequent kneading of the gel.

3. The result is predictable, the gel can be used by different age groups. The number of procedures for the older age group is recommended to be increased to 5. After a course of 3-5 procedures, the result lasts for 6-9 months or more.

4. The procedure is comfortable, well tolerated, and does not require rehabilitation.

5. The mechanism of action of the material "COLLOST"® on skin sensitivity and vascular manifestations is not yet clear. But it is obvious that the effect of collagen is to trigger those natural processes that proceed more slowly without it.