

Assessment of selected skin parameters and quality of life after cosmetic procedures

Submission date 05/05/2020	Recruitment status No longer recruiting	☒ Prospectively registered ☐ Protocol
Registration date 28/05/2020	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 26/05/2023	Condition category Skin and Connective Tissue Diseases	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Acne is a common skin condition that affects most people at some point. It causes spots, oily skin and sometimes skin that's hot or painful to touch. The following treatments will be used in the study: carboxytherapy (infusions of carbon dioxide), oxyabrasion (exfoliation with oxygen), hydrogen purification (with hydrogen-infused water), and cosmetic acids. Some treatments will be used in a combined manner to check whether it is better to perform one treatment using a device or, for example, combine two types of treatments.

Who can participate?

Female volunteers aged 18 to 25 who suffer with acne vulgaris

What does the study involve?

Six sessions of treatment will be performed with different combinations of carboxytherapy, oxyabrasion, cosmetic acids and hydrogen purification. Before the treatment series, 1 week and 14 days after the end of the sessions, skin measurements will be taken and questionnaires will be filled out.

What are the possible benefits and risks of participating?

Possible benefits include reduced skin oiling and efflorescence (redness), higher skin moisture, and better quality of life after treatments. There are no expected risks.

Where is the study run from?

Public Higher Medical Professional School in Opole (Poland)

When is the study starting and how long is it expected to run for?

October 2020 to June 2024

Who is funding the study?

Public Higher Medical Professional School in Opole (Poland)

Who is the main contact?
Dr Karolina Chilicka
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Contact information

Type(s)

Public

Contact name

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Additional identifiers

Protocol serial number

KB/57/NOZ/2019

Study information

Scientific Title

Assessment of selected skin parameters and quality of life after cosmetic procedures in people with acne vulgaris and oily skin

Study objectives

1. Cosmetic treatments decrease the oiling of the skin
2. Cosmetic treatments increase the moisture of the skin
3. Cosmetic treatments act anti-inflammatory on skin efflorescence

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 10/03/2019, Research Ethics Committee from Opole Medical School (68 Katowicka Street; 45-065; Poland; +48 (0)774410882; biurorektora@wsm.opole.pl), ref: KB/57/NOZ/2019

Primary study design

Interventional

Study design

Prospective randomised parallel clinical study with follow-up analysis

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Acne vulgaris

Interventions

Current intervention as of 07/09/2020:

Cosmetic treatments will be performed: hydrogen purification, oxyabrasion, cosmetic acids, carboxytherapy. The following comparisons of treatments will be made:

1. Oxyabrasion (20 people) - hydrogen purification (20 people)
2. Oxyabrasion (20 people) - cosmetic acids (20 people)
3. Hydrogen purification (20 people) - cosmetic acids (20 people)
4. Hydrogen purification and cosmetic acids (20 people) - cosmetic acids (20 people)
5. Oxyabrasion and cosmetic acids (20 people) - oxyabrasion (20 people)
6. Carboxytherapy (20 people) - carboxytherapy and cosmetic acids (20 people)
7. Carboxytherapy (40 people) - carboxytherapy and hydrogen purification (40 people)
8. Carboxytherapy (20 people) - carboxytherapy and oxyabrasion (20 people)
9. Microdermabrasion and cosmetic acids (20 people) (added 28/01/2021)

The following parameters will also be checked: oiling, pH and skin hydration, porphyrin measurement, pore size, desquamation. Measurements will be made between the eyebrows, 1 cm from the left and right wing of the nose and 1 cm from the lower lip (in the chin area). Every treatment will be performed over a 14-day interval.

After this time skin parameters will be measured (14 and 30 days after finishing sessions). Skin sebum (oily secretion) level, hydration and pH of skin will be compared between these two groups. Participants will have skin sebum level, hydration, and pH checked using a Sebumeter®, Corneometer®, and skin pH meter respectively. Porphyrin measurement will be taken by Visiopor (Courage Khazaka), desquamation and pore size by Visioscope PC 35 (Courage Khazaka). Quality of life will be checked by using DLQI and Skindes-29 questionnaires before and after finishing treatments. After all sessions, the follow-up measurements will be made after.

The use of skin will be performed before and after the treatments, to check the collagen fibres (added 21/09/2020).

Also a microbiome of the skin will be checked. The sample will be taken by a swab before and after finishing the cosmetic series (added 29/10/2020).

Also questionnaires: COPE, CISS, PH, PKIE, PSS 10, phq9 will be assessed at 14 and 30 days

Previous intervention:

Cosmetic treatments will be performed: hydrogen purification, oxyabrasion, cosmetic acids, carboxytherapy. The following comparisons of treatments will be made:

1. Oxyabrasion (20 people) - hydrogen purification (20 people)

2. Oxybrasion (20 people) - cosmetic acids (20 people)
3. Hydrogen purification (20 people) - cosmetic acids (20 people)
4. Hydrogen purification and cosmetic acids (20 people) - cosmetic acids (20 people)
5. Oxybrasion and cosmetic acids (20 people) - oxybrasion (20 people)
6. Carboxytherapy (20 people) - carboxytherapy and cosmetic acids (20 people)
7. Carboxytherapy (40 people) - carboxytherapy and hydrogen purification (40 people)
8. Carboxytherapy (20 people) - carboxytherapy and oxybrasion (20 people)

The following parameters will also be checked: oiling, pH and skin hydration. Measurements will be made between the eyebrows, 1 cm from the left and right wing of the nose and 1 cm from the lower lip (in the chin area). Every treatment will be performed over a 14-day interval.

After this time skin parameters will be measured (14 and 30 days after finishing sessions). Skin sebum (oily secretion) level, hydration and pH of skin will be compared between these two groups. Participants will have skin sebum level, hydration, and pH checked using a Sebumeter, Corneometer, and skin pH meter respectively. Quality of life will be checked by using DLQI and Skindes-29 questionnaires before and after finishing treatments. After all sessions, the follow-up measurements will be made after.

Also questionnaires: COPE, CISS, PH, PKIE, PSS 10, phq9 will be assessed at 14 and 30 days (added 27/07/2020)

Intervention Type

Procedure/Surgery

Primary outcome(s)

Skin sebum content measured using the Sebumeter at baseline, 1 week and 2 weeks after finishing the treatments

Key secondary outcome(s)

1. Skin hydration measured using a Corneometer at baseline, 1 week and 2 weeks after finishing the treatments
2. Transepidermal pH measured using Skin-pH-Meter at baseline, day 14 and 30 after finishing the treatments
3. General quality of life measured using the Hellgren and Vincent scale and also Skindex-29 and DLQI questionnaires at baseline and 2 weeks after finishing the treatments

Completion date

21/06/2024

Eligibility

Key inclusion criteria

1. Female aged 18-25
2. Acne vulgaris

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Upper age limit

25 Years

Sex

Female

Total final enrolment

44

Key exclusion criteria

1. Severe acne
2. Pregnancy, lactation
3. Active inflammation of the skin
4. Bacterial, viral, allergic and fungal relapsing skin diseases
5. Disturbed skin continuity
6. Fresh surgical procedures in the treatment area
7. Active herpes
8. Treatment with isotretinoin
9. Reduced immunity
10. Epilepsy
11. Claustrophobia

Date of first enrolment

01/10/2020

Date of final enrolment

30/10/2020

Locations**Countries of recruitment**

Poland

Study participating centre

Public Higher Medical Professional School in Opole

Katowicka 68

Opole

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45-060

Sponsor information

Organisation

Public Higher Medical Professional School in Opole

ROR

<https://ror.org/000bjk220>

Funder(s)

Funder type

University/education

Funder Name

Public Higher Medical Professional School in Opole

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Karolina Chilicka (karolina.chilicka@poczta.onet.pl).

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	Oxybrasion	01/07/2022	14/07/2022	Yes	No
Results article		19/05/2023	26/05/2023	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes
Study website	Study website	11/11/2025	11/11/2025	No	Yes