



USE OF COSMETIC PRODUCTS CONTAINING EXTRACT OF MARIGOLD (CALENDULA OFFICINALIS) IN CASES OF ACNE PROBLEM AT THE EDUCATIONAL AND BEAUTY CENTER "TOP BEAUTY" – SOFIA

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ABSTRACT

Background. The antimicrobial, antifungal and antiviral properties of different water-alcohol extracts of marigold against different strains of microorganisms, which have been proven in placebo controlled clinical trials, on one hand, and the etiology of acne, posing a serious dermal problem for many young people, on the other hand, are the main prerequisite for the preparation of a liquid extract of marigold, its inclusion in the gel prepared with the gelling agent methylcellulose and its administration in 24 adolescents with acne at the beauty and educational center "Top Beauty" in Sofia.

Methods. A liquid extract of marigold is prepared through percolation. The so prepared liquid extract is used for the preparation of gel, based on methylcellulose. The transparent gel is applied on 24 men and women with acne. A standard questionnaire of 10 questions was applied.

Results. The relative share of women is twice as higher as that of men. After processing and analysis of their answers it was found that prior to seeking assistance at the beauty center, the young people with acne had sought medical advice with a dermatologist (54%), GP (29%) and with medical cosmetics expert (17%).

Conclusions. More than half of the young people have successfully solved this problem, there is no effect in only two of them, and in 1/3 there is a partial improvement, and longer therapy is required.

Key words: extract and gel of marigold (*Calendula officinalis*), acne, anti-inflammatory, antifungal and antimicrobial effect.

INTRODUCTION

Marigold, *Calendula officinalis* (from Latin *Calendae* - the first day of the month) in folk medicine is used as diaphoretic, diuretic and in case of liver complaints and it has antispasmodic and anthelmintic action. (1) However, there is no scientific evidence for these properties of *Calendula officinalis*. Therapeutic indications described in the monograph ESCOP refer to cosmetic effect on mild inflammation of the skin and mucosa, as well as improvement of surface wounds.

Proven antimicrobial, antifungal and antiviral properties of different hydroalcoholic extracts

of marigold against *Staphylococcus aureus* and *Streptococcus fecalis* *Prophyromonas gingivalis*, *Fusobacterium nucleatum*, *Campylobacterium gingivalis*, *Veillonella parvula*, *Eikenella corrodens*, *Peptostreptococcus micros* and *Actinomyces odontolyticus*, *Staphylococcus aureus*, *Sarcina lutea*, *Escherichia coli*, *Klebsiella pneumoniae* and *Candida monosa* on one hand, and on the other hand, the aetiology of acne, posing a serious dermal problem for many young people are the main prerequisite for carrying out investigations with a cosmetic product containing extract of marigold on patients with acne, visiting the beauty and educational center "Top Beauty". (2) As the most appropriate cosmetic product, a hydrogel prepared with methylcellulose as a gelling agent is selected.

Hydrogels are a suitable form for application to oily skin because they do not possess oily effect on the skin, but they have a drying and cleaning action. The ethanol content in the

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liquid extract of marigold further improves the beneficial effects of the cosmetic product for application on inflamed skin.

MATERIALS AND METHODS

The liquid extract of marigold is prepared through percolation. The extract must contain not less than 0.40% flavonoids. The percentage of flavonoids found in the ready extract by the use of liquid chromatography method is 1.26%. Transparent gel is prepared with light yellow colour and specific flavor of marigold. The action of the gel with extract of marigold in 24 cases of acne in beauty and educational center "Top Beauty"- Sofia was investigated. After three months treatment at home with cosmetic products based on extract of marigold

and periodic visits to the cosmetic center for having all relevant procedures all the patients have completed a questionnaire containing ten questions in order to assess their satisfaction with the cosmetic procedures. (3)

RESULTS AND DISCUSSION

The demographic characterization of the sample show that the age of people with such a problem varies within the range 15 – 31 years of old. The following diagram shows the percentage of patients by sex, 8 men and 16 women, i.e. female patients dominate. All the 24 patients with acne, consented to be treated with cosmetic products containing liquid extract of marigold (**fig.1**).

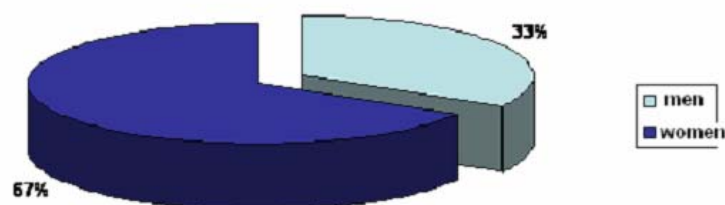


Fig.1. Distribution of patients by sex

The answers to the question. "For how many years have you had the cosmetic acne problem?" are presented in the next diagram (**fig. 2**). The diagram shows that the majority of patients have had this cosmetic problem for one year, only 7 patients for more than two years.

The next diagram shows clearly the answers to the question "What is the acne type?" It is obvious that the mostly spread type is pustulas (33%). (**fig.3**)

By the answers to the question "Was any prior medical consultation performed?", presented in **Figure 4** it can be seen that the highest proportion of such consultations is with a

dermatologist, followed by the GP and medical cosmetics expert.

The most often prescribed therapy is with antibiotics, corticosteroids and gel or cream for external use. As key factors for the occurrence of acne, hormonal imbalance, stress and heredity are pointed. The medical cosmetic expert consultations is the most rare that leads to the conclusions of underestimation of the effect of cosmetic procedures.

The next diagram presents the answers of respondents receiving treatment at home with cosmetic products of marigold (**fig. 5**). As it can be seen by the diagram, the most often used is a solution for cleaning the face, followed by cream and gel.



Fig.2. Duration of the problem

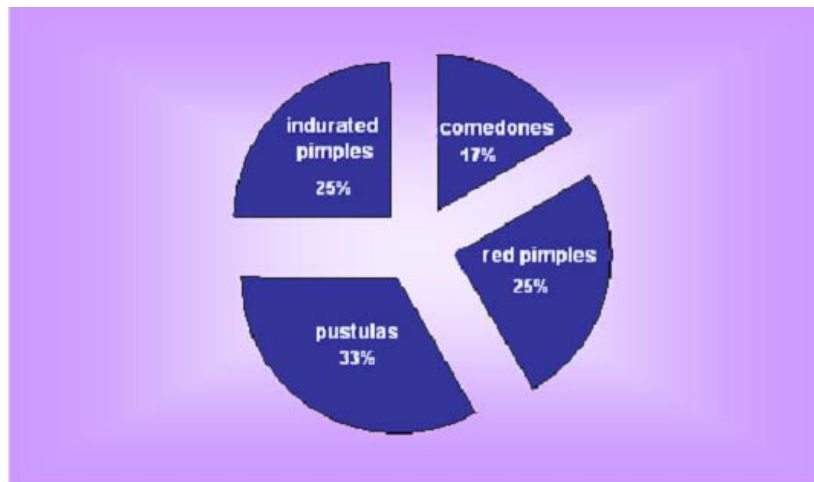


Fig.3. Per cent distribution of answers for the type of acne

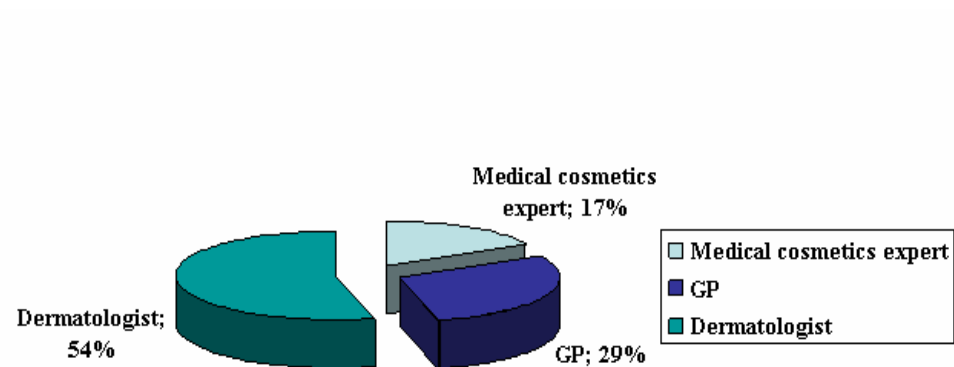


Fig.4. Preferred medical consultation by the patients

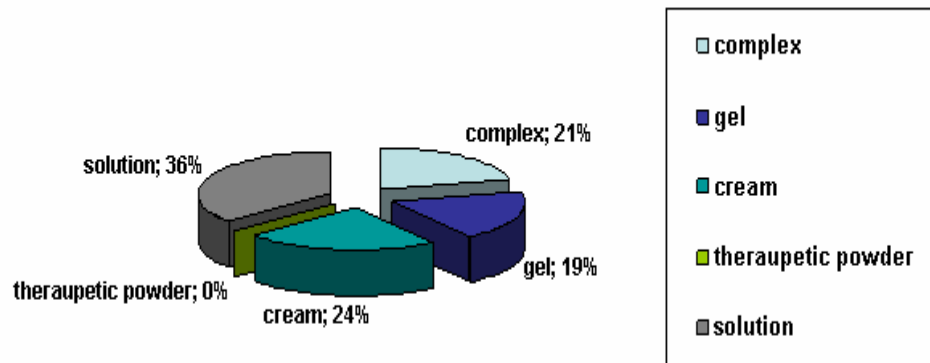


Fig.5. Distribution of used products of marigold at home

Fig. 6. shows the duration of use of these products. The largest share falls on people

using the product for more than 3 months, followed by those using it for 2 and 1 month.



Fig. 6 Duration of therapy with marigold products

The next figure presents the percentage of answers on the results from the procedures. Over half of the patients are cured completely, there is no effect in 2 cases and in 1/3 of the cases there is a partial effect and longer therapy is required (fig.7).

Only 5 persons are not satisfied with the therapy, while 15 are satisfied and 4 are more or less satisfied, i.e. results of this study confirm the literature data on the therapeutic effects of marigold in inflammatory changes of the skin.

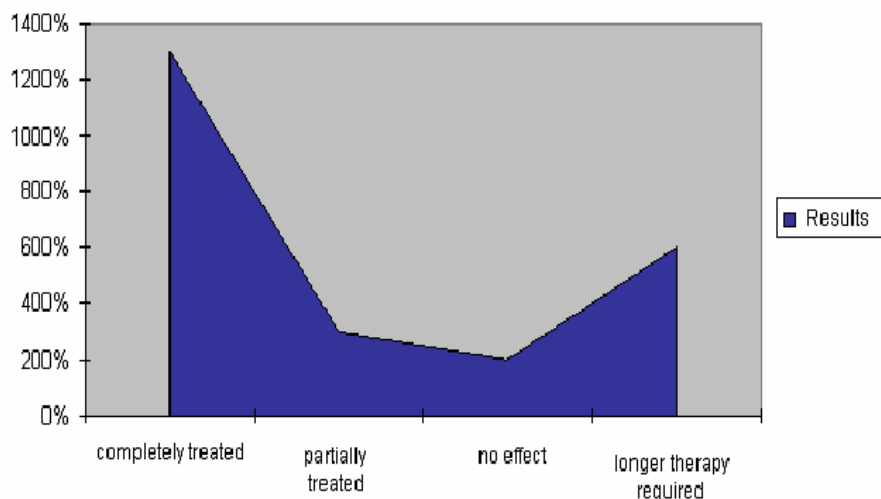


Fig.7. Results from the procedures with gel containing extract of marigold in cases of acne

CONCLUSIONS

The results from the provided study show that the extract of marigold prepared, is consistent with the percolation method standards. The extract is included in gel with methylcellulose as a gelling agent.

The results from the questionnaire applied show that after administering in 24 cases of acne at the beauty center “Top Beauty”-Sofia, very good results have been achieved and 79% of treated individuals are satisfied with its use. The Masters of pharmacy knowledge and training gives them the possibility to prepare and successfully to apply phytoproducts as a

cosmetic procedure even in very complicated and severe cases, such as acne.

REFERENCES

1. Barnes J, Anderson LA, Phillipson JD. Herbal medicines (3rd ed). London: Pharmaceutical Press, 2007. (710 pages)
2. F. Gaedcke und B. Steinhoff. Herbal medicinal products. Scientific and regulatory basis for development, quality assurance and marketing authorization. Medpharm. Scientific Publishers, Stuttgart, 2003.
3. Basic Tests for Drugs, Pharmaceutical Substances, Medicinal Plant Materials and Dosage Forms, WHO. 1998