

Cerebrosides Role in the Pathogenesis of Vitiligo

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INTRODUCTION

Cerebrosides is a natural organic compound of complex lipids group. They consist of aminoalcohol sphingosine, a fatty acid and carbohydrate (galactose or glucose). Cerebrosides were present in tissues of man and animals which see their functioning related activity the body at general and cell level. Cerebrosides mainly present in nervous tissue, especially at myelin shell nerve fibers and also found at spleen, lungs, erythrocyte and organs. Glucosylceramide or cerebrosides occur in great parts of lipids skin where they required for forming lamellar horny layer epidermis and barrier permeability on skin [1]. As components of biological membranes cerebrosides exert a powerful influence on the functional activity of biological membranes.

Types of Cerebrosides

There are 4 main types of cerebrosides, in particular

- Kerasine
- Phrenosin
- Oksinervon
- Nervon

They perform the function of receptor that affects membrane transport, involved in neurotransmission and in the intercellular contact biological recognition and adhesion processes and cell aggregation. It should be noted that although the total amount of cerebrosides in small cages, however, they are of great interest and research intensively studied in recent years. Primarily, this is due to their participation in the implementation of basic cellular processes and in the occurrence of certain pathologies [2-4]. However, it still remains poorly studied about the role and place of glycosphingolipids, cerebrosides particularly in vital organs and tissues in general and humans. Virtually studied cerebrosides participate in the occurrence and development of pathological processes, i.e, their role in the pathogenesis of many human diseases, including skin, remains unknown.

Cerebrosides metabolic disorders caused by reduced activity or no enzyme hydrolysis of bound occurrence of diseases that are

hereditary such as Krabbe's disease, Gaucher's disease. We carried out a comparative study regarding the content of cerebrosides in the skin of healthy individuals and patients with vitiligo.

DISCUSSION

A study conducted on skin biopsy specimens of 12 healthy individuals and 25 patients with vitiligo. Among them 7 were healthy men and 5 healthy women and 16-9 patients including men and women. Metodika cerebrosides study is based on the definition included in the galactose and its composition. Extraction of total lipids from skin biopsies and purification from non-lipid contaminants were performed by Folch method using chloroform-methanolic mixture (2:1). The extract was filtered and the filtrate was added 0.4 ml of distilled water, stirred and after phase separation, removed the upper section and the lower evaporated on a rotary evaporator, in which galactose was determined using the procedure of cerebrosides in conjunction with the methodology [5-7]. The principle of the method is based on the reaction with cerebrosides anthrone dissolved with concentrated H_3PO_4 , followed by addition ortsinovogo reagent prepared in concentrated sulfuric acid. At the same time developing red color, the intensity of which is measured on the SF-26 spectrophotometer at a wavelength of 505 nm.

The calibration curve for the standard solution of galactose. The control sample contained 2 ml of orthophosphoric acid and 4 ml ortsinovogo reagent. It should be pointed out that patients with vitiligo affected and unaffected (leather, located in the vicinity of the white spot) skin were studied individually. When this decrease concentration cerebrosides celebrated as at depigmented so at unaffected sites skin sick, the observed changes content in cerebrosides at investigated areas skin patients vitiligo. It has unidirectional character.

These data are completely new, since information in the literature on determining cerebrosides in human skin, both in normal and in pathological absent. Established contact, data on changes in the content of cerebrosides at skin at vitiligo leads to

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Received: September 09, 2021; **Accepted:** September 23, 2021; **Published:** September 30, 2021

Citation: Talatovich SB (2021) Cerebrosides Role in the Pathogenesis of Vitiligo. J Clin Exp Dermatol Res. S11:579.

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think about specific role these classes lipids at pathogenesis dermatosis. It should be noted that to date etiopathogenesis vitiligo all remains not clarified. Therefore, specific experimental data concerning metabolic violations at vitiligo can make a certain contribution at ascertaining pathogenesis it dermatosis.

CONCLUSION

Considering role of cerebroside at quality barrier permeability of skin, it must be noted that they are required for intracellular membrane transport, cell proliferation and survival. It is possible for the lag before, what decrease level cerebroside at skin at vitiligo is a cause of suppression above cell processes, at end eventually can lead to death cell leather, Specifically, melanocytes. In data literature violation of metabolism galactocerebroside causes change in breath and synthesis ATP at mitochondria liver and brain. We can assume that similar infringement at functioning mitochondria is at cells skin at change content cerebroside. This, in its queue supports hypothesis about meaning infringement exchange cerebroside at skin at mechanism of development Vitiligo. For the first time, the content of cerebroside in the human skin was normal in vitiligo. A marked decrease in the content of cerebroside was found both in depigmented and unaffected skin of patients with vitiligo.

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