ISSN 2509-4327 (print)
ISSN 2510-4780 (online)

Deutscher Wissenschaftsherold
German Science Herald

№ 4/2017

Die Zeitschrift „Deutscher Wissenschaftsherold" ist eine Veröffentlichung mit dem Ziel ein breites Spektrum der Wissenschaft allgemeinverständlich darzustellen. Die Redaktionsleitung versteht sich als Vermittler zwischen Wissenschaftlern und Lesern. Durch die populärwissenschaftliche Bearbeitung wird es möglich unseren Lesern neue wissenschaftliche Leistungen am besten und vollständigsten zu vermitteln. Es werden Untersuchungen, Analysen, Vorlesungen, kurze Berichte und aktuelle Fragen der modernen Wissenschaft veröffentlicht.

Impressum
Deutscher Wissenschaftsherold – German Science Herald
Wissenschaftliche Zeitschrift
Herausgeber:
InterGING
Sonnenbrink 20
31789 Hameln, Germany
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Gestaltung:
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Auflage: № 4/2017 (September) – 30
Redaktionsschluss September, 2017
Erscheint vierteljährlich
Editorial office: InterGING
Sonnenbrink 20
31789 Hameln, Germany
Tel.: + 49 51519191533
Fax.:+ 49 5151 919 2560
Email: info@dwherold.de
Deutscher Wissenschaftsherold - German Science Herald is an international, German/English language, peer-reviewed, quarterly published journal.
№ 4/2017
Passed in press in September 2017
Druck: WIRmachenDRUCK GmbH
Mühlbachstr. 7
71522 Backnang
Deutschland

INDEXING: Google Scolar, WorldCat, Index Copernicus, InfoBase Index, Journal Index, Citefactor, International Scientific Indexing, JIFACTOR, Scientific Indexing Services, International Institute of Organized Research.

REDAKTIONSKOLLEGIUM / INTERNATIONAL EDITORIAL BOARD:

Lists of references are given according to the Vancuver style

DDC-UDC 616-097. 1: 616-053.13] : 611.41.018.1] – 092.9 DOI:10.19221/2017423

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SPECIFICS OF DISTRIBUTION OF GLYCOSAMINOGLYCANS IN THE WHITE PULP OF THE SPLEEN AND STROMA OF RATS AFTER EXPERIMENTAL MODELING INJECTION INSIDE THE FETUS OF ANTIGENS OF DIFFERENT NATURE

Abstract. *This work describes peculiarities of rat's splenic white pulp and stromal elements structure attached to different terms after the birth normally and after intrauterine injection of antigens of different kinds. It's established that intrauterine injection of antigens with different nature leads to quantitative changes in the accumulation of glycosaminoglycans low sulphated to 11 days of life, and high sulphated compounds on the first month of life, regardless of the antigen type, that may be a manifestation of qualitative imbalance in the formation of connective tissue in different functional zones of the rat's spleen. The majority of these changes disappear up to 90th day after the birth.*
Key words: *spleen, white pulp, stroma, connective tissue, morphogenesis, intrauterine antigens injection, glycoproteins*

Introduction. Recently observed a progressive increase in the number of infectious and allergic diseases in infants, which makes it necessary to study the role of the immune system in these processes and develop new parenteral and oral vaccines because children's health is one of the most important indicators of the country's well-being and health in general. There is a high frequency of pathological course of pregnancy, infection of pregnant by various antigens [6], accompanied by a dysfunction of the placenta and inside the fetus action of antigens of different nature on the fetus [1-5].

Objective. To establish the distribution of structures glycosaminoglycans in rat spleen in normal and after intrauterine injection of antigens of different nature by using of experimental models.

Materials and methods. The object of the study was 196 spleen of white rats aged from 1st to 90th day of postnatal life. Inside the fetus injection of antigens and saline by operational measures conducted by the method of M.A. Voloshin. For this purpose on 17-18 th day after insemination pregnant females midline laparotomy was done undere the anesthesia, adhering to all the rules of aseptic and antiseptic. Fetus, which were getting from the abdominal cavity through the uterus, through the shell, subcutaneously, in interscapular area and in amniotic fluid injected by 0.05 ml of the respective solution. Peritoneum and muscle layers were continually sewn by catgut seams. The animals were divided into 4 groups: - intact rats; II (control) – animals after inside the fetus injection of saline solution; III - rats, which injected by the vaccine Vaxigrip in utero; IV – animals which was injected by the vaccine of parotitis in utero. The whole complex of glycosaminoglycans founded by the alcyonic blue solution at pH 2,6 the critical concentration of MgCl2 0.2M. Differentiation of non-sulfated, low - and high sulfated compounds was performed after processing of sections of testicular hyaluronidase. Low- and high sulfated glycosaminoglycans distinguished with using of color sections solutions alcyonic blue with a critical concentration of MgCl2 0.6M, 0.2M.

Results and discussion. Newborn animals III and IV group in the capsule, trabeculae and stromal cells of splenic white pulp the total content of glycosaminoglycans greater due to the low sulfated forms and hyaluronic acid, compared with animals of intact group. Revealed changes in an organism of newborns after inside the fetus injection of antigen, regardless of route of injection and its nature, reflecting the imbalance in the terms and rate of formation of parenchyma and stroma [1, 3]. All groups of rats for 1 - the 90th day of observation the non-sulfated content decrease and increase the content of low- and high sulfated glycosaminoglycans. In the third and fourth groups accumulation of sulfated compounds occurs faster pace to 11 days. This difference is almost leveled, and the total content

of glycosaminoglycans increased on a 14 days in all groups. On the 21st day of life in the capsule, trabeculae high sulfated accumulation of glycosaminoglycans in the third group of animals runs faster. By the 90th day of life the difference between the accumulation of glycosaminoglycans in different groups was not found. This reflects a change of pace and timing of the formation of the local immune system. There is occurrence and the development of hyperplastic processes in internal organs, leading to advance their quality functional establishment (Which had previously been shown in studies of Ivanova N.E., Novosyolova O.A., Svetlitsky A.A., Chuhina S.V., Karzova M.V.). Undulating change of color intensity of SHYK-positive structures correlated with episodes of acceleration and deceleration organ morphogenesis. Backlog growth rates of thick muscular layer of the animals, injected with the antigen, was previously registered in the development of the small intestine, showing the inverse correlation with our results.

Conclusions. Newborn animals which were subjected to prenatal antigenic action, regardless of route of injection and the nature of the antigen, reduces amylase resistant glycoproteins and increased glycogen content in the structures of the spleen, which is observed on 45 days of life, compared to the intact group of rats, but rates leveled on 90 days. Newborn animals, antigen primed groups in the capsule of the spleen, the total content of glycosaminoglycans is more due to low sulfated forms, compared with animals intact group. The content of glycosaminoglycans increases the maximum 14 days in all groups. In rats during from 1 to 90 days of observation increases non-sulfated and decreases low sulfated and high sulfated and glycosaminoglycans for 90 days of life the difference between the accumulation of glycosaminoglycans graded.

So intro the fetus action antigen results in quantitative changes in the accumulation of glycosaminoglycans low sulfated to 11 days of life, and high sulfated compounds on the first month of life, regardless of the antigen type, that may be a manifestation of qualitative imbalance in the formation of connective tissue.

Prospects for further research. Continued study of the role of immune mechanisms to monitor differentiation and maturation of cells of the whole organism in conditions of fetal antigen will help to determine the factors of risk of disturbances in the mother-placenta-fetus as a result of infection of the fetus during pregnancy.

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CONTENT:

Deutscher Wissenschaftsherold
German Science Herald

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet athttp://dnb.dnb.de

№ 4/2017 – 30
Passed in press in September 2017