INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT

SJIF 2019: 5.222 2020: 5.552 2021: 5.637 2022:5.479 2023:6.563

elSSN 2394-6334 https://www.ijmrd.in/index.php/imjrd Volume 11, issue 02 (2024)

THE USE OF ANTIOXIDANT DRUGS IN PEDIATRIC PRACTICE

Ashuraliyeva M.A.

Andijan State Medical Institute, Uzbekistan

Abstract: Diseases belonging to the class of free radical pathology are common in childhood, due to which drugs with antioxidant effects are widely used in pediatric cardiology, gastroenterology, nephrology, neonatology, pulmonology, etc.

Keywords: Method, diagnosis, drug, pediatrics, treatment.

INTRODUCTION

It is known that in the pathogenesis of a large number of diseases, disruption of the stability of biological membranes, which are the target for the action of poisons, toxins, drugs, radioactive and ultraviolet irradiation, is important. The main process leading to their destruction is free radical lipid peroxidation (LPO). Uncontrolled sex poses a danger to children, whose antioxidant defense mechanisms are imperfect.

MATERIALS AND METHODS

Free radicals are formed in any pathology. Most of the potentially dangerous effects are due to the formation of reactive oxygen species, which act as pro-oxidants and are capable of oxidizing other substances. Many reactive oxygen species are free radicals. The most important prooxidants and free radicals found in living organisms are hydrogen peroxide, singlet oxygen, ozone, and hypochlorous acid. The process of formation of lipid peroxides in biological membranes occurs via a free radical mechanism. The peculiarity of chain reactions is that free radicals, when reacting with other molecules, do not disappear, but are converted into other free radicals. Due to their high reactivity, the resulting lipid peroxides pose a significant danger to the body and can have a general damaging effect on the cell. However, humans have effective protective systems that can either prevent the damaging effects of LPO products, or inhibit their formation at the stage of oxygen activation, or destroy already formed metabolites.

RESULTS AND DISCUSSION

Children are especially sensitive to the effects of adverse environmental factors due to [2]:

- high metabolic rate;
- morphofunctional immaturity of the enzymatic systems of the liver, kidneys, and intestines;
- low stomach acidity;
- increased permeability of the skin and intestinal mucosa;
- high intensity of processes of myelination of nerve fibers;
- increased permeability of the blood-brain barrier;
- morphofunctional immaturity of the immune system.

Premature newborns are characterized by immaturity of the antioxidant system and uneven formation of its individual components, which depends on gestational age and characteristics of intrauterine development. Promising in neonatology is the study of the role of lipid peroxidation

INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT SJIF 2019: 5.222 2020: 5.552 2021: 5.637 2022:5.479 2023:6.563 eISSN 2394-6334 https://www.ijmrd.in/index.php/imjrd Volume 11, issue 02 (2024)

in bronchopulmonary dysplasia, retinopathy of prematurity, necrotizing enterocolitis, etc. In older children, the weakening of antioxidant protection and the uncontrolled increase in the processes of lipid peroxidation is one of the important links in the pathogenesis of diabetes. The pathogenetic role of damage to the membranes of the epithelium of renal tissue in the formation of dysmetabolic nephropathy, calcium nephrolithiasis, tubulointerstitial nephritis, and pyelonephritis has been established. Taking into account the fact that many kidney diseases are accompanied by significant activation of LPO and a decrease in the content of antioxidants in the blood, along with conventional drug treatment, the prescription of antioxidants during the period when the exacerbation of the disease subsides is justified. It has been shown that the course of pyelonephritis in children is accompanied by significant activation of LPO and a decrease in the content of antioxidants in the blood [1–4]. In this regard, the effectiveness of complex therapy for pyelonephritis largely depends on the degree of protection of cell membranes, which is the basis for the inclusion of antioxidant drugs in complex therapy.

In the body, the natural antioxidant system is represented by enzymes, individual proteins, waterand fat-soluble compounds.

Vitamin E (tocopherol) is the most important antioxidant. By protecting membranes, tocopherol helps maintain the activity of membrane-bound enzymes. Tocopherol is not synthesized in the human body and is classified as a necessary nutritional factor—vitamin.

Vitamin A (retinol, retinal, retinoic acid) and its provitamins - beta-carotene and other carotenoids. The vitamin A requirement of a healthy adult is 1.5–2 mg (5,000–6,000 IU) per day.

Bioflavonoids are characterized by high antioxidant activity. These include: quercetin, kaempferol, myricetin, apigenin, luteolin. The main source of flavonoids are plant products (strawberries, rose hips, viburnum, raspberries, chokeberries, green tea leaves, lemon, unripe walnuts, milk thistle fruits).

Glutathione, one of many organic compounds, contains a reactive sulfhydryl group that is capable of oxidation and participation in redox reactions. Glutathione plays a key role in protecting cells and the intracellular environment from reactive oxygen species.

Kudesan is a domestic preparation that contains water-soluble ubiquinone and vitamin E. Kudesan is created on the basis of molecular microencapsulation technology, which promotes better absorption and increased bioavailability (translation of a fat-soluble substance into the form of an aqueous solution).

CONCLUSION

Thus, the effectiveness of complex therapy for most diseases largely depends on the degree of protection of the structure and function of cell membranes, which is why, in almost any pathology during the period of exacerbation of the pathological process, the inclusion of antioxidant drugs in therapy is justified.

REFERENCES

1. Rzhevskaya O.N., Korovina N.A. // Urology and nephrology. 2014; 6:56-60.

2. Korovina N.A., Rzhevskaya O.N., Israilov A.G. Pathogenetic substantiation of rational antioxidant therapy for kidney diseases in children // Pediatrics. 2012; 5:82–86.

INTERNATIONAL MULTIDISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT

SJIF 2019: 5.222 2020: 5.552 2021: 5.637 2022:5.479 2023:6.563

elSSN 2394-6334 https://www.ijmrd.in/index.php/imjrd Volume 11, issue 02 (2024)

3. Vozianov A.F., Maydannik V.G., Bidny V.G., Bagdasarova I.V. Fundamentals of childhood nephrology. Kyiv: Book-plus, 2012; 22–87.

4. Zakharova I.N. Clinical and pathogenetic aspects of tubulointerstitial kidney diseases in children. Author's abstract. diss. Doctor of Medical Sciences M.: 2011; 48.

5. Prilepina I.A., Shilina N.M., Kopytko M.V. and others. Nutritional correction of the health status of children with reduced resistance in preschool institutions // Questions of children's dietology. 2014; 2:2.

6. Korovina N.A., Zakharova I.N., Zaplatnikov A.A., Obynochnaya E.G. Vitamins and microelements in the practice of a pediatrician // RMZh. 2014; 12:1:48–55.

