

Pathogenetic basis of the formation of myopia in children with polymorbidity

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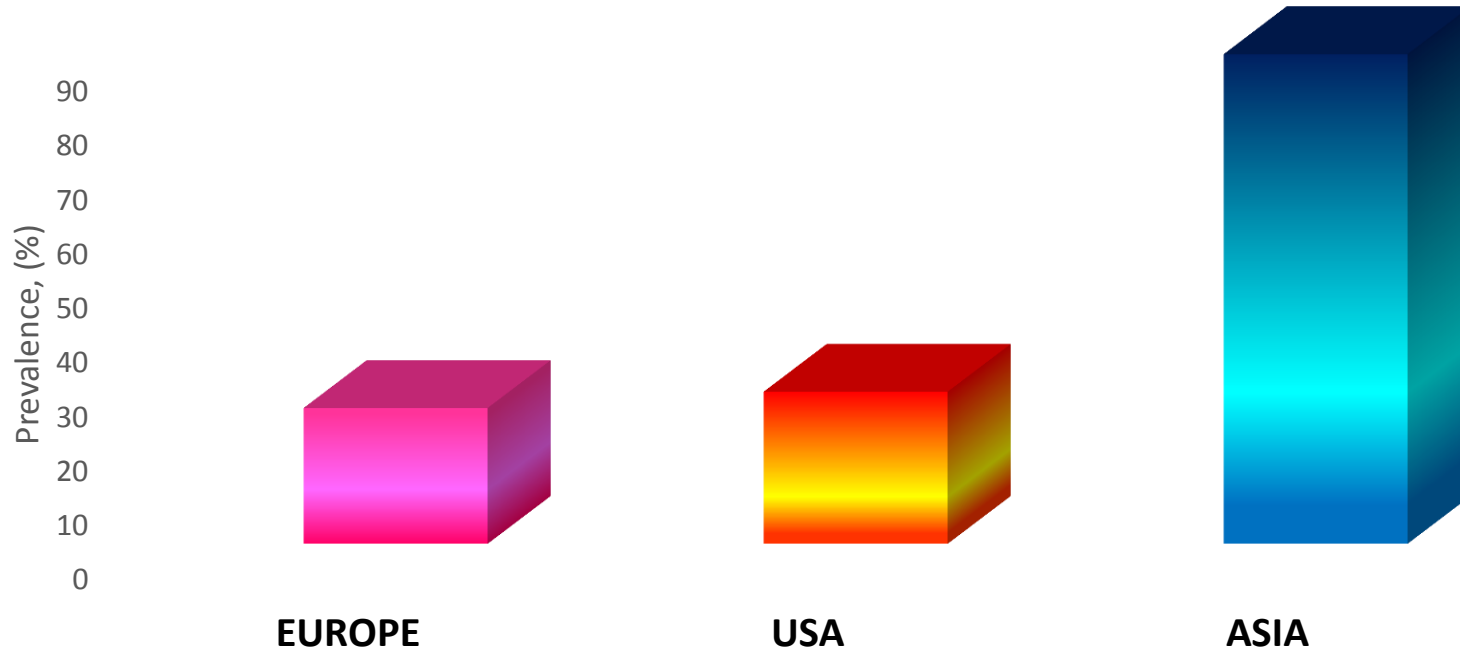
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Alexander Kazimirski

- Myopia in childhood and adolescence is the most common cause of visual impairment.
- Degenerative changes in the retina increase the risk of loss of vision.

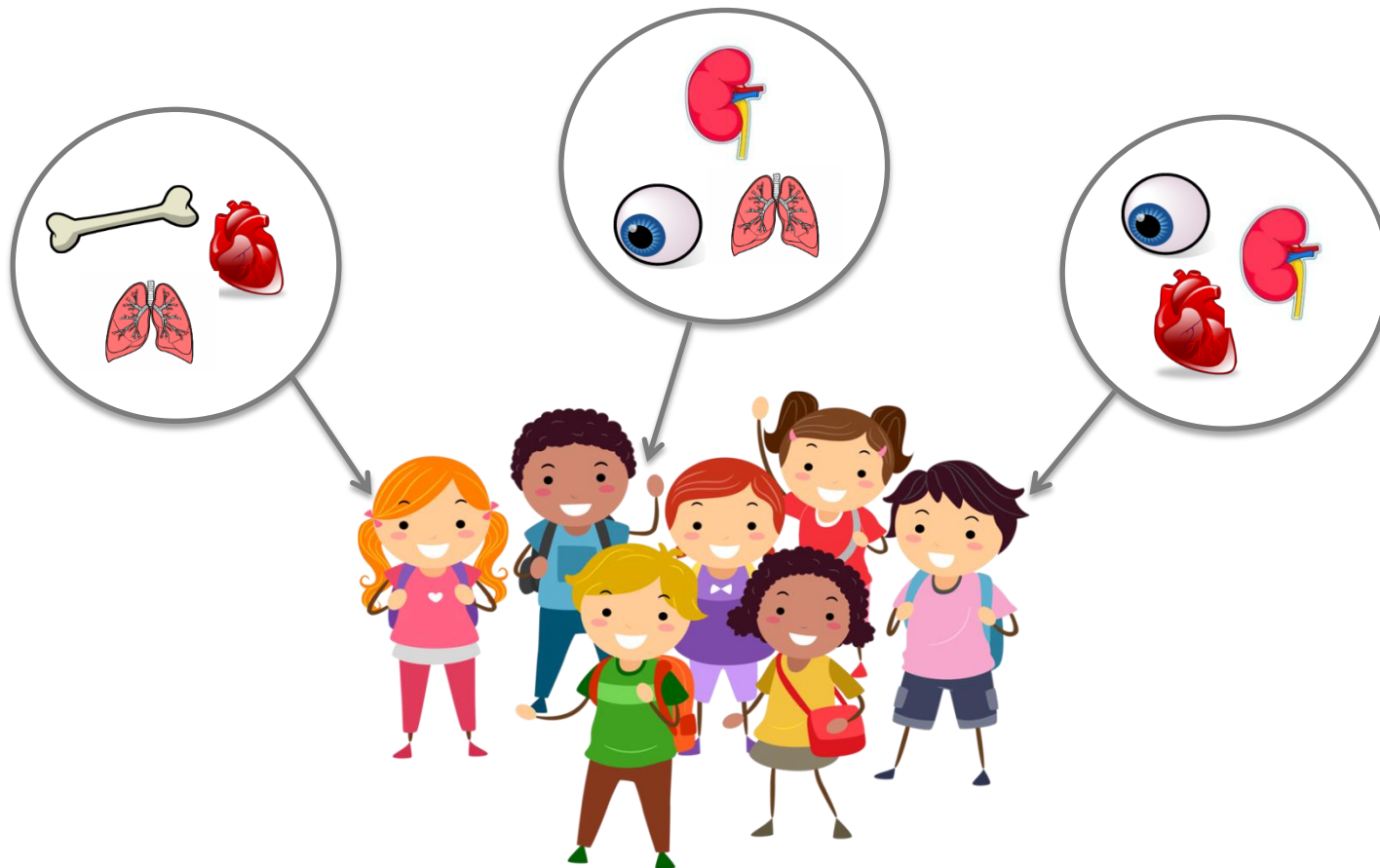
Foster PJ, Jiang Y., 2014; Lam CS, Goldschmidt E, Edwards MH, 2004; Cumberland PM, Peckham CS, Rahi JS, 2007; French AN, Morgan IG, Burlutsky G, Mitchell P, Rose KA, 2013; Logan NS, Shah P, Rudnicka AR, et al., 2011; Pan CW, Ramamurthy D, Saw SM, 2012; Wen G, Tarczy-Hornoch K, McKean-Cowdin R, Cotter SA, Borchert M, Lin J, et al., 2013.

PREVALENCE OF MYOPIA IN THE WORLD



Wong YL, Saw SM, 2016; Molly J Smith, Jeffrey J Walline, 2015; Vitale S, Ellwein L, Cotch MF, Ferris FL 3rd, Sperduto R, 2008; Ip JM, Huynh SC, Robaei D, Kifley A, Rose KA, Morgan IG, Wang JJ, Mitchell P, 2008.

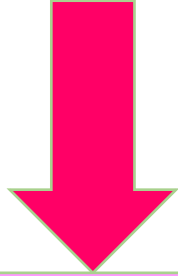
POLYMORBIDITY



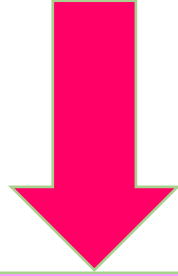
STAGES OF RESEARCH

1. Anamnesis
2. Ophthalmic examinations
3. Determination of the surface phenotype of lymphocytes
4. Determination of the level of MDA in the blood
5. Determination of the retinol level in the blood

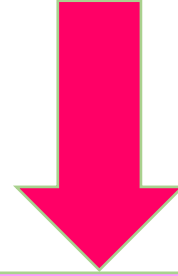
118 children: boys - 49 (41,5%), girls - 69 (58,5%)



**Myopia with
polymorbidity
(45)**

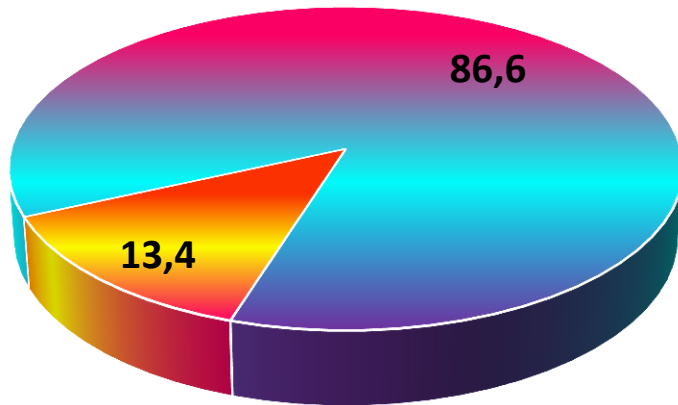


**Myopia
(38)**



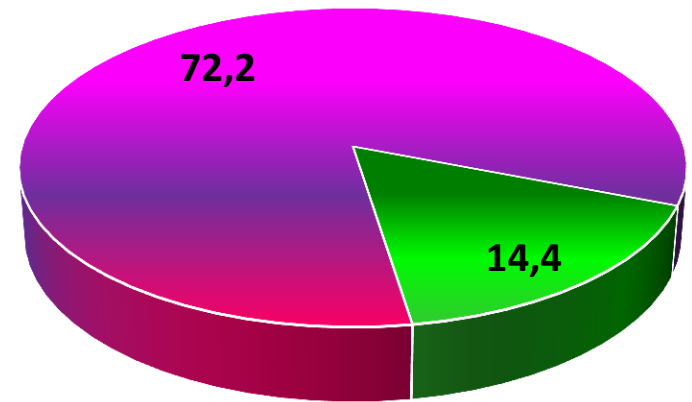
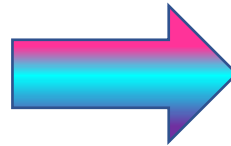
**Emmetropia
(35)**

Prevalence of polymorbidity



■ Concomitant chronic pathology

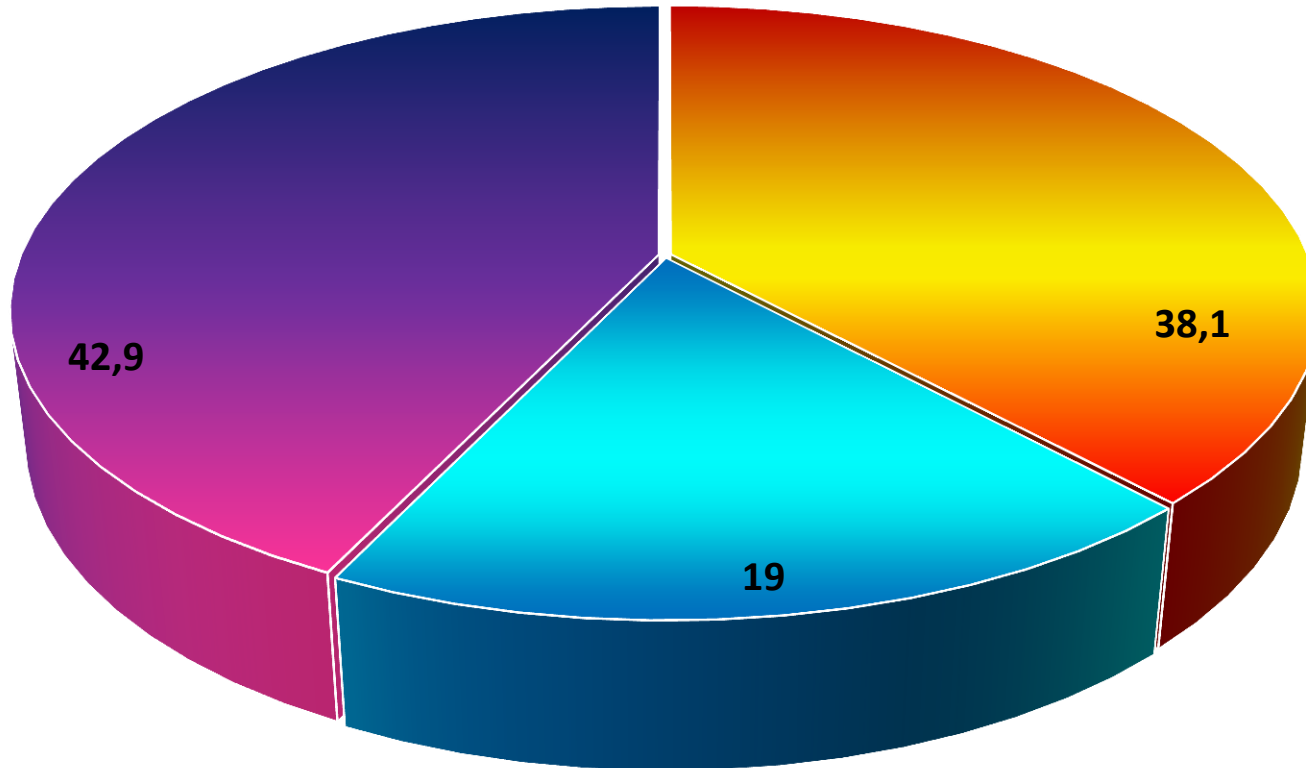
■ Healthy children



■ 1 concomitant chronic disease

■ 2 and more concomitant chronic pathology

Polymorbidity

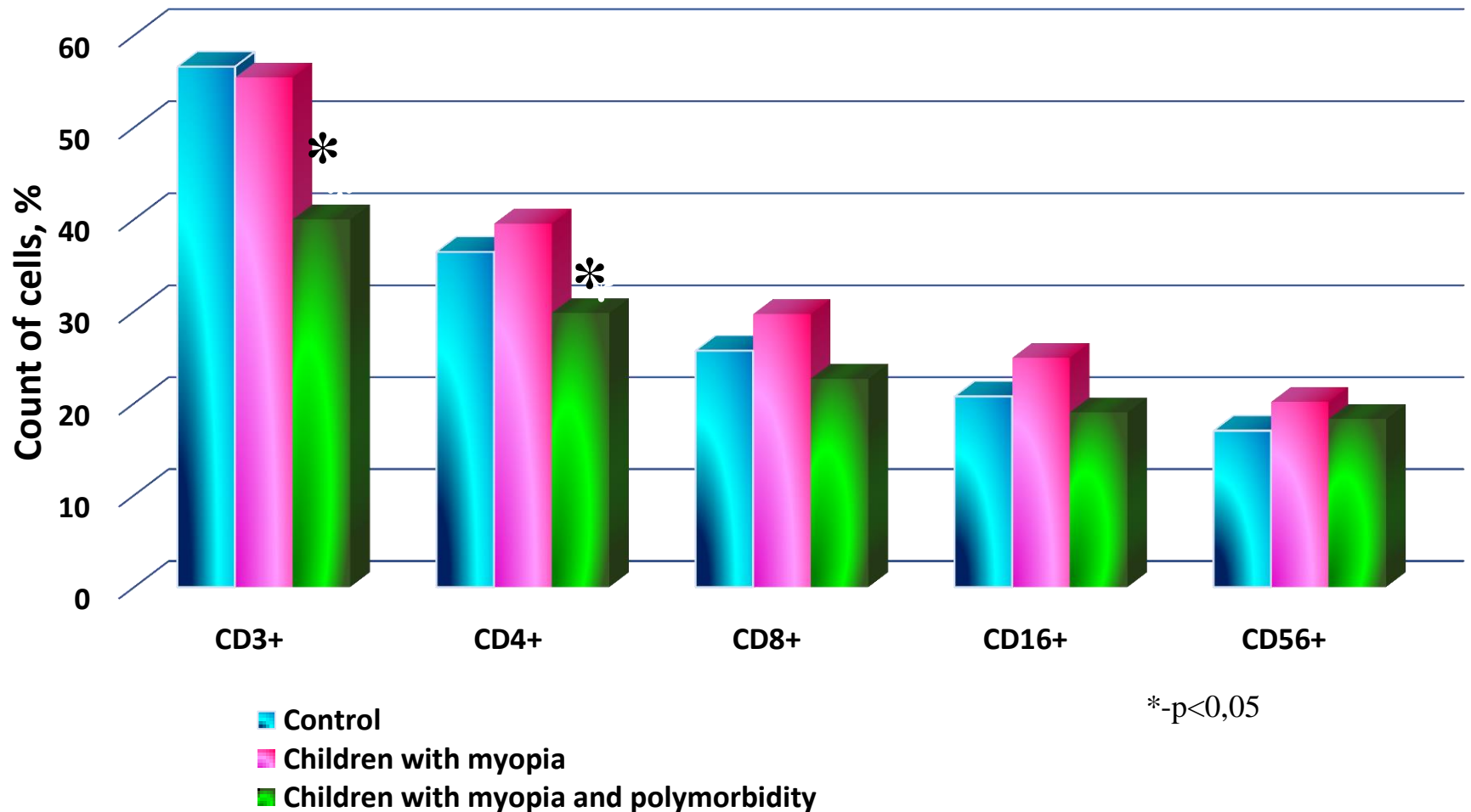


- Diseases of ENT and respiratory system
- Diseases of GIT and GU system
- Diseases of musculoskeletal system

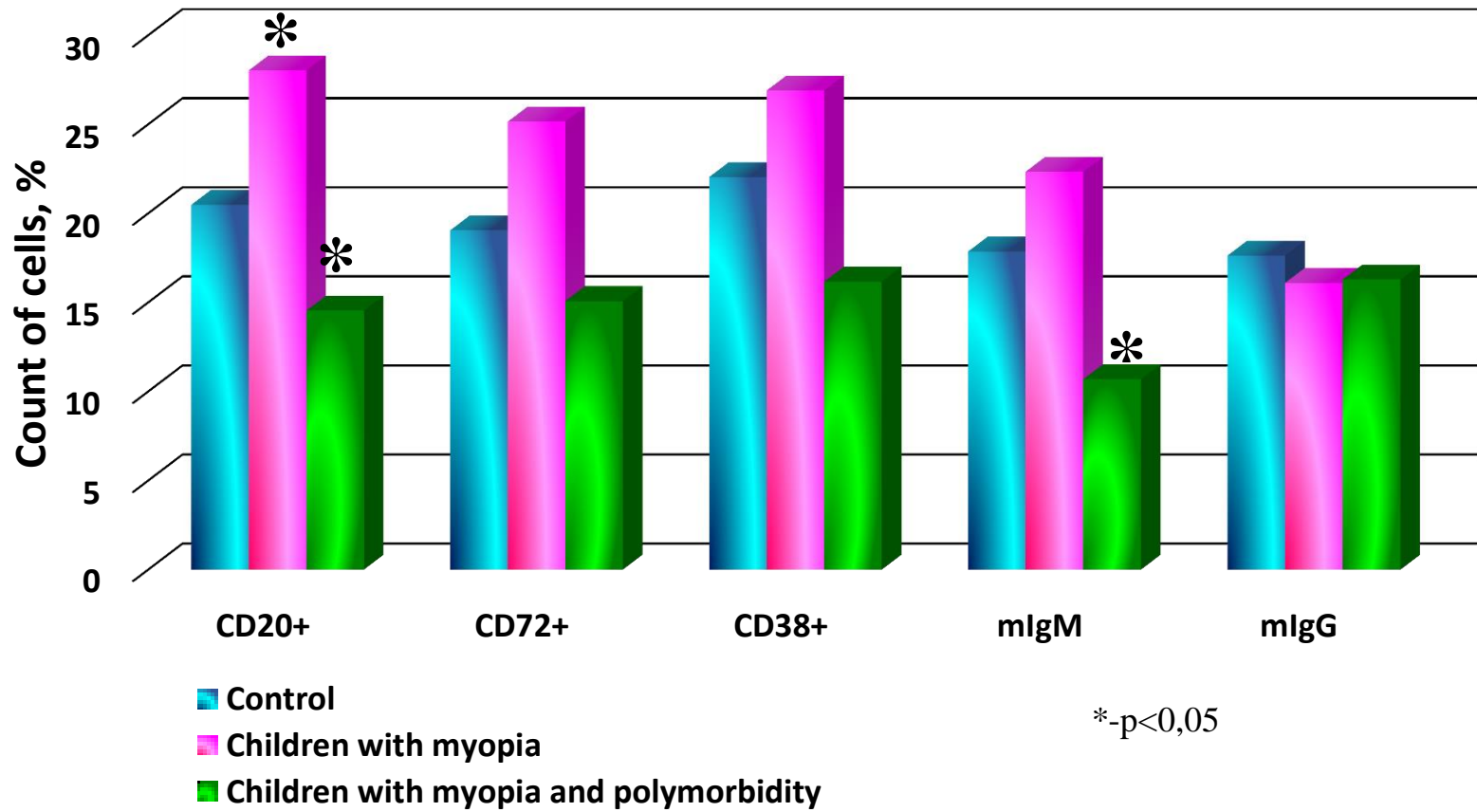
Risk factors for polymorbidity

- Age of pregnancy >28 y.o.
- Pathology of pregnancy
- Complications during childbirth
- ARI in children during the neonatal period, up to 12 months, and after 3 y.o.

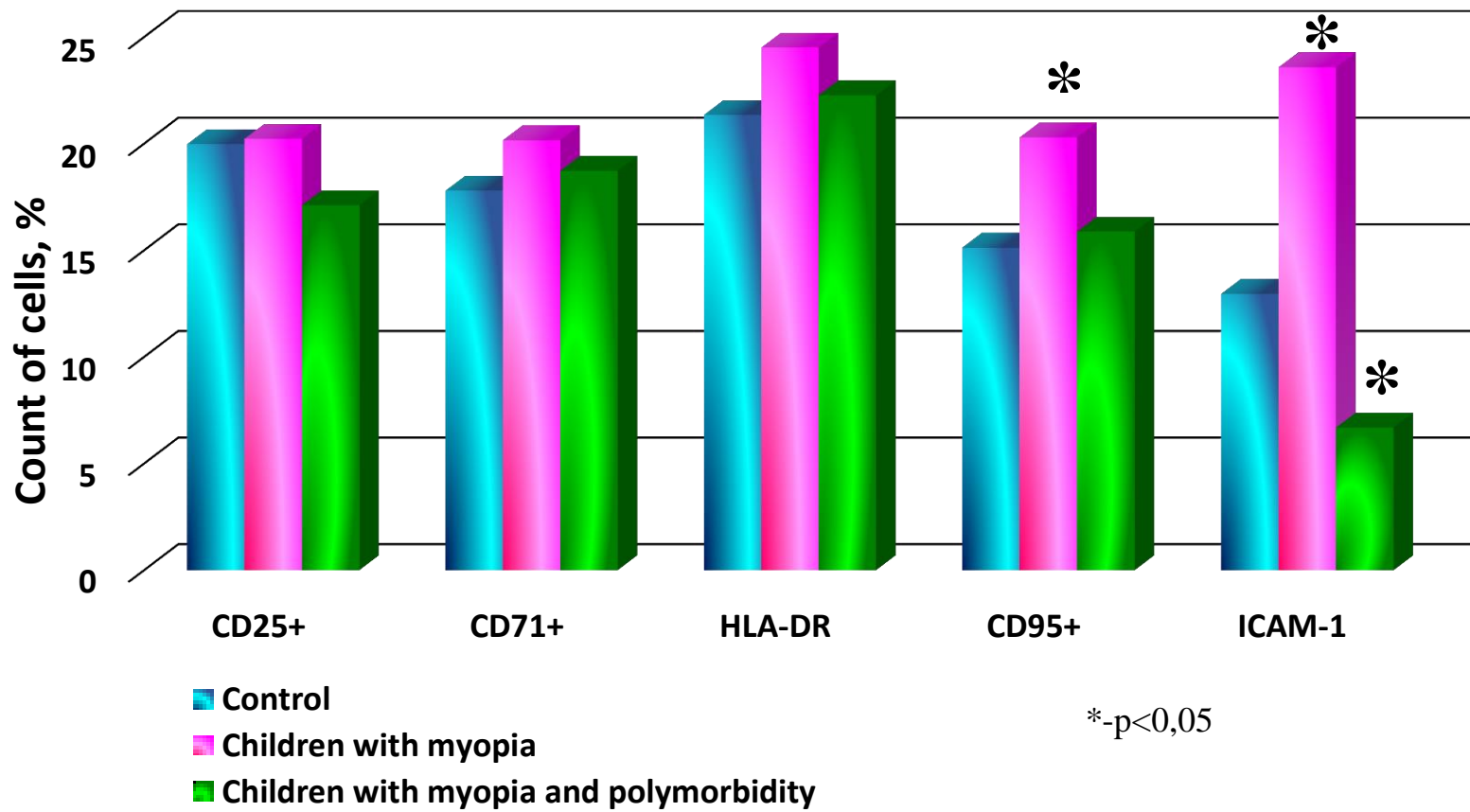
Surface markers of T-lymphocytes and NK-cells



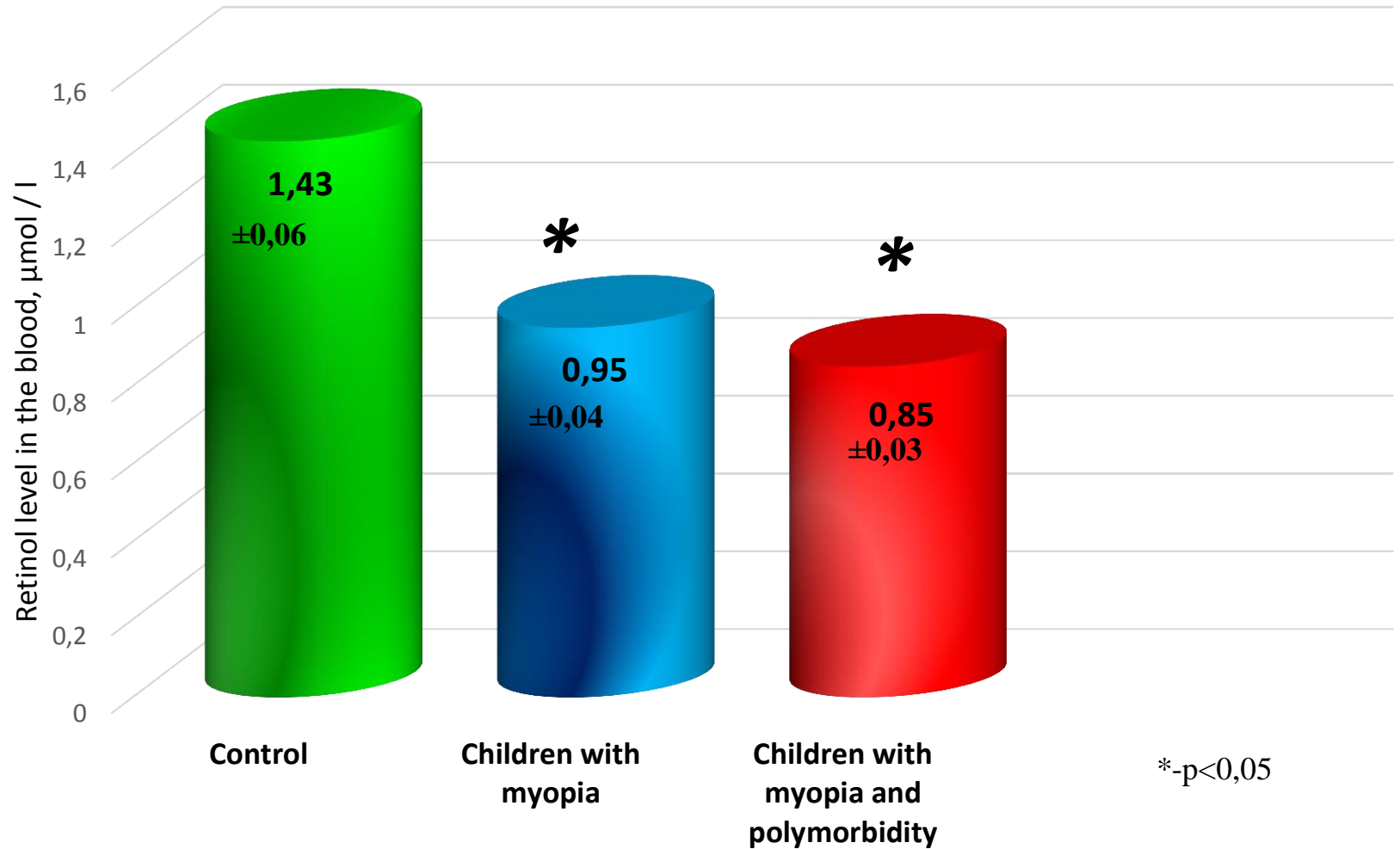
Surface markers of B-lymphocytes



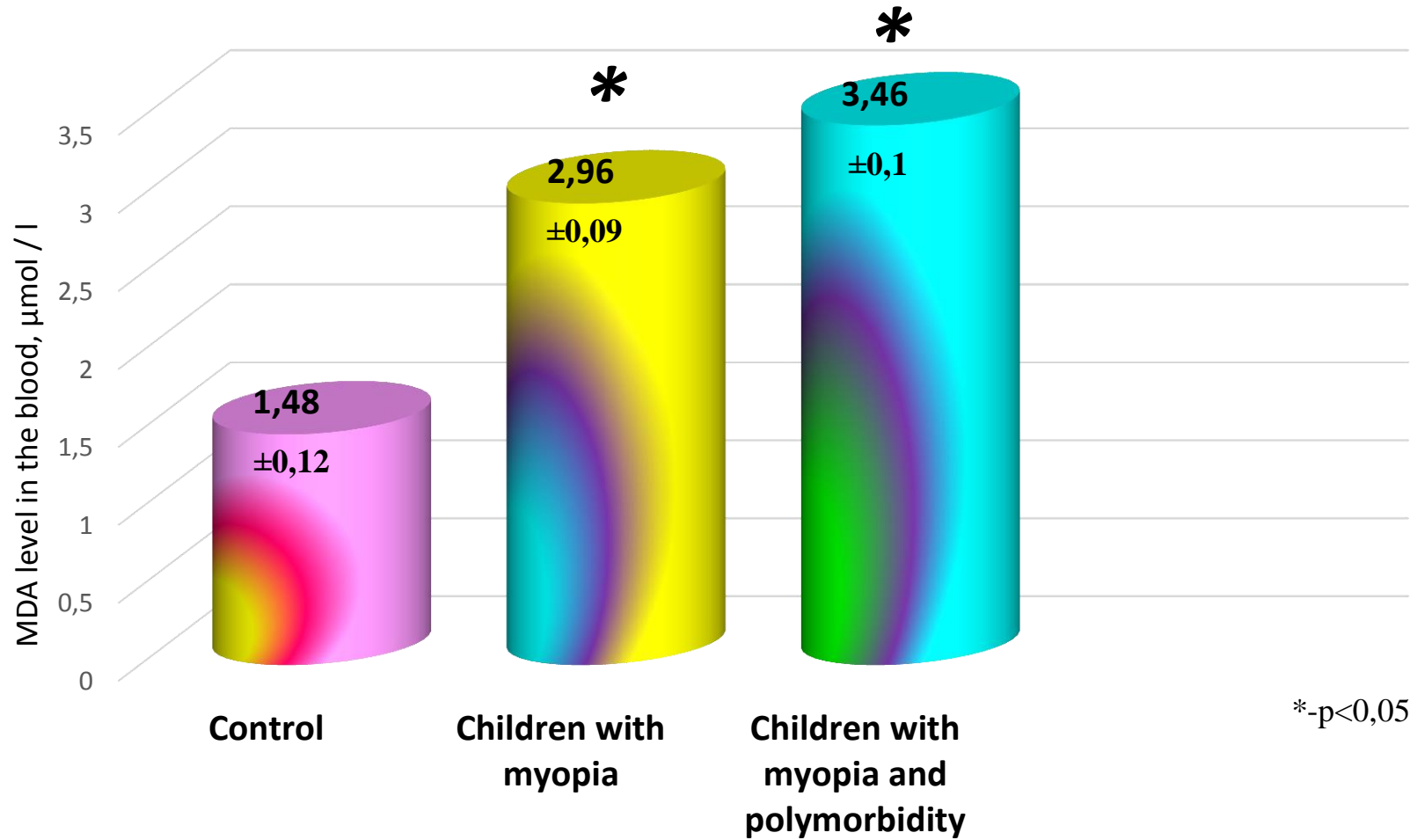
Surface markers of lymphocyte activation



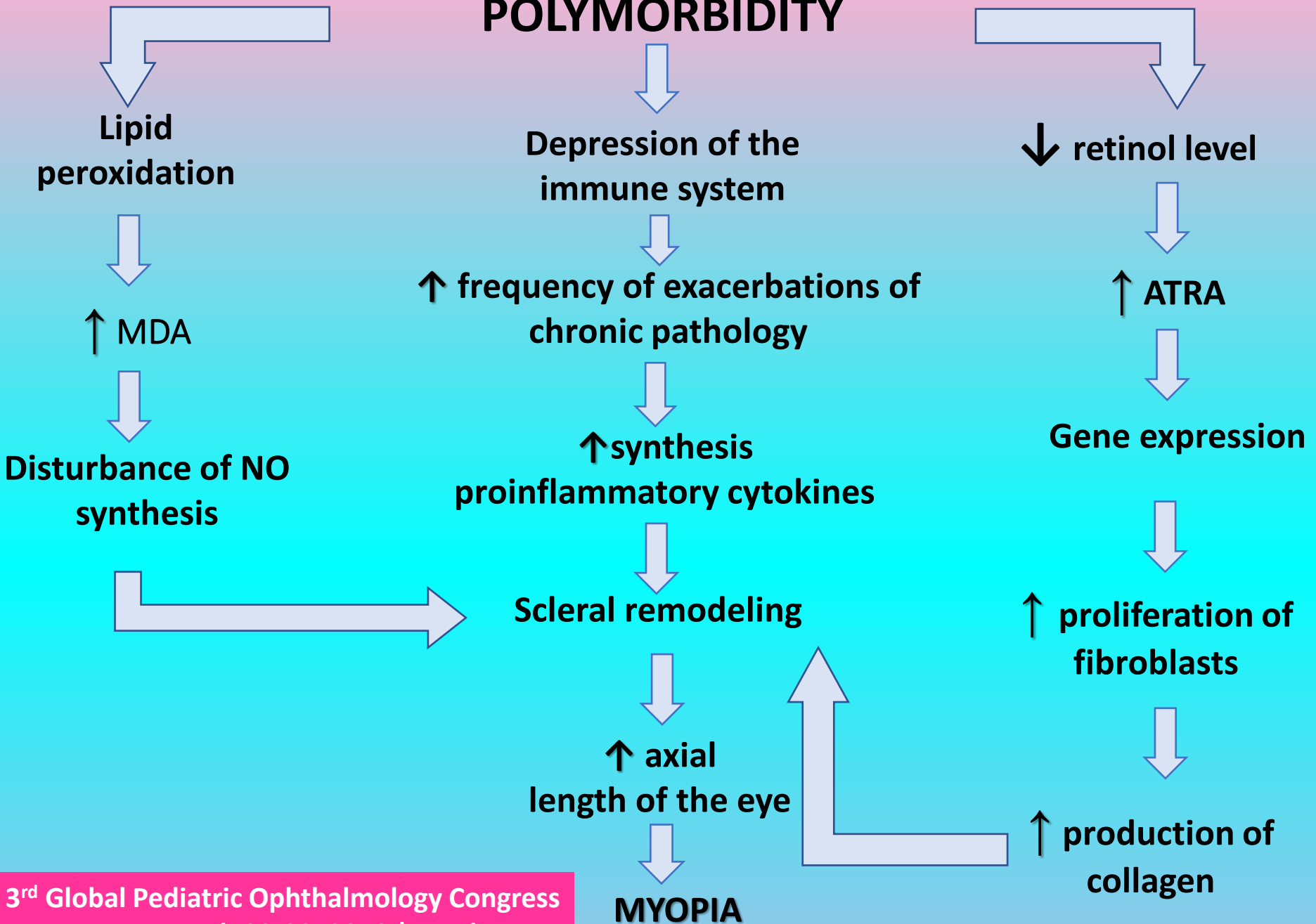
Retinol level



MDA level



POLYMORBIDITY



Conclusions

- In children with acquired myopia concomitant chronic disease is observed in 72.2%, two or more chronic diseases occur in 14.4%. The structure of polymorbidity is represented by diseases of ENT and respiratory system (38,1%), diseases of GIT and GU system (19%), diseases of musculoskeletal system (42,9%).
- Risk factors of polymorbidity were presented by age of pregnancy >28 y.o., pathology of pregnancy, complications during childbirth, ARI in children during the neonatal period, up to 12 months, and after 3 y.o.
- A significant decrease of retinol in serum and increase level of MDA in children with axial myopia and polymorbidity were revealed.
- In children with myopia and polymorbidity CD3+, CD4+, CD20+, mIgM, CD54+ lymphocytes was decreased.

***Thank you for your
attention***