4. Pludovski P. Practical guidelines for the supplementation of vitamin D and the treatment of deficits in Central Europe – recommended vitamin D intakes in the general population and groups at risk of vitamin D deficiency / P. Pludovski, E. Karczmarewicz, M. Bayer[et al] // Endokrynologia Polska. – 2013. – Vol. 64 (4). – P. 319–327.

5. Povoroznyk V. V. Vitamin D deficiency and insufficiency among Ukrainian population / V. V. Povoroznyk, N. I. Balatska, V. Y. Muts [et al] // Standardy madyczne. Pediatria. – 2012. –Vol. 5 (9). – P. 584–589.

ANALYSIS OF LIGHT TRANSMISSION AGGREGOMETRY TRACINGS IN TREATED ESSENTIALS HYPERTENSIVE PATIENTS INDUCED BY EPINEPHRINE

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Background/Introduction. Light transmission aggregometry (LTA) is the gold standard test for detecting the functional activity of the platelets [1, p.559]. However, there is not clear evidence of the visual interpretation of the results [2, 3]. According to the recommendations of the standardization of the LTA of the International Society on Thrombosis and Haemostasis (ISTH) [2] there should be the platelet aggregation tracing evaluation by the presence of waves induced by epinephrine, however, there is neither steps of the analysis no validated reference intervals (RIs) for the LTA results.

Purpose. The aim of the study was to present clinical platelet aggregation algorithm of visual interpretation of the LTA patterns and provide RIs in essential hypertensive individuals.

Methods. The study included 220 treated essential hypertensives aged 60 (54−71) years, 57% male. For aggregometry assays, the Born method was used. Response of platelets to activation by epinephrine (5 μmol/L) was assessed by a LTA (Salar, Minsk, RB) according to ISTH recommendations. Exclusion criteria

were documented congenital blood disorders. We analyzed the maximal aggregation in light transmittance (T_{max}) from baseline after the addition of agonist monitored for 10 min; the percentage of aggregation at the end of 3 min, 5 min and 10 min (T_{3min}, T_{5min} and T_{10min}, respectively). The algorithm of visual analysis included reviewing LTA tracings for the primary and the secondary waves between 2 and 5 min. For each group of LTA tracings, we provided RIs.

Results. We categorized the LTA tracings for four groups. The first one (n=51, 23 %) included two waved patterns without reduction of the second wave (T_{max} 80 (63-89) %; T_{3min} 30 (1-45) %; T_{5min} 58 (33-71) %; T_{10min} 74 (63-86) %). The second one (n=23, 10%) contained fused primary and secondary aggregation waves without reduction of the second wave (T_{max} 65 (51-75) %; T_{3min} 50 (38-64) %; T_{5min} 58 (44−71) %; T_{10min} 61 (44-74) %). The third one (n=103, 47 %) was biphasic LTA responses or fused waves with reduction of the second wave (T_{max} 17 (9-21) %; T_{3min} 11 (6-16) %; T_{5min} 11 (7-17) %; T_{10min} 11 (5-19) %). And the fourth one (n=43, 20 %) showed total reduction of the aggregation (T_{max} 2 (0-4) %; T_{3min} 0 (0−2) %; T_{5min} 1 (0-2) %).

Conclusion(s). The LTA results can be helpful in the visual examination of the aggregation tracings for detecting acquired platelet disorders due to drug-induced abnormalities in treated essential hypertensives.

References:

1. Michelson A. D. Platelets / A. D.Michelson.– Academic press, 2013. – 1398 p.

2. Recommendation for the standardization of light transmission aggregometry: a consensus of the working party from the platelet physiology subcommittee of SSC/ISTH / M. Cattaneo, C. Cerletti, P. Harrison [et al.] // J. Thromb. Haemost. – 2013, Vol. 11. – P. 1183–1189.

3. Development of North American consensus guidelines for medical laboratories that perform and interpret platelet function testing using light transmission aggregometry / C. P. M. Hayward, K. A. Moffat, A. Raby[et al.] // Am.J.Clin.Pathol. – 2010. – Vol. 134. – P. 955–963.