

in women with IDAP and chorionic villous structures corresponding to gestational age. No significant differences were found between study groups and physiological pregnancy with regard to optical density of immunohistochemical staining for the anti-apoptotic protein Bcl-2 in trophoblast cytoplasm ($p > 0.05$). However, enhanced production of the pro-apoptotic protein Bax in trophoblast CV was observed at both gestational periods in women with IDAP (Table). Bax levels in trophoblast cytoplasm were significantly higher than in physiological pregnancy ($p < 0.001$), and intergroup comparisons also demonstrated statistically significant differences between the two gestational periods ($p < 0.001$).

Table

Regulation of proliferative activity and trophoblast cell death ($M \pm m$)

Study groups	Ki-67-positive nuclei in trophoblast CV (%)	Optical density of IHC staining for Bcl-2 (rel. units)	Optical density of IHC staining for Bax (rel. units)
Group 3 (control), n=21	3 ± 0.1	0.326 ± 0.0016	0.264 ± 0.0015
Group 1 (29–32 weeks), n=20	75 ± 1.8 ($p_3 < 0.001$; $p_2 < 0.001$)	0.321 ± 0.0016 ($p_3 > 0.05$; $p_2 > 0.05$)	0.345 ± 0.0015 ($p_3 < 0.001$; $p_2 < 0.001$)
Group 2 (33–36 weeks), n=20	62 ± 1.5 ($p_3 < 0.001$)	0.322 ± 0.0017 ($p_3 > 0.05$)	0.364 ± 0.0015 ($p_3 < 0.001$)

Note. p_3 – probability of differences with control group (Group 3); p_2 – probability of differences between Groups 1 and 2. Relative units of optical density (rel. units).

Conclusions. Organometric, histological, histochemical, and immunohistochemical studies conducted among women with normal maturation of the placental chorionic villous tree combined with IDAP at two gestational periods (29–32 and 33–36 weeks) demonstrated that iron deficiency anaemia in pregnancy directly affects placental villous development by enhancing trophoblast proliferation in response to chronic hypoxia.

Ilika V.V.

HISTOLOGICAL STUDY OF THE PLACENTAL VILLOUS TREE IN CHRONIC BASAL DECIDUITIS AND IRON DEFICIENCY ANEMIA OF PREGNANT WOMEN

Department of Pathological Anatomy

Bukovinian State Medical University

Introduction. Our previous studies have shown that the combination of chronic inflammation of the basal plate with iron deficiency anemia (IDA) in pregnant women exerts a dual damaging effect on the placenta. Chronic basal deciduitis leads to impaired uteroplacental circulation, while anemia aggravates ischemic and hypoxic processes. Since the villous component is the main morphofunctional unit of the placenta, its damage determines the severity of placental insufficiency. The study of villous tree alterations in the combination of these pathologies provides deeper insight into the mechanisms underlying its development.

The aim of the study. To study the morphological features of the placental villous tree in chronic basal deciduitis and iron deficiency anemia in pregnant women.

Material and methods. A total of 82 placentas were examined. The material was fixed for 48 hours in 10% neutral buffered formalin, followed by standard dehydration and paraffin embedding. Serial 5 μ m sections were prepared and stained with hematoxylin and eosin, as well as by the Slynchenko method to assess connective tissue structures.

Results. In cases of chronic basal deciduitis, the basal plate was thickened, with focal lymphocytic and plasmacytic infiltration and occasional macrophage admixture. The walls of the spiral arteries showed sclerosis and foci of hyalinosis, with luminal narrowing. The villous tree demonstrated signs of distal hypoplasia. The villi varied in size, predominantly medium- and small-diameter, with a reduced number of terminal villi and elongation of intermediate ones. Moderate stromal edema, focal compaction of connective tissue elements, and early fibrotic changes were

noted. Villous vessels were mostly narrowed, with reduced capillary density (hypovascularization). The cytotrophoblast showed moderate hyperplasia, while the syncytiotrophoblast exhibited focal cytoplasmic vacuolization and small areas of desquamation. The intervillous space contained a moderate number of maternal cells (mainly lymphocytes and macrophages) and occasional fibrin deposits.

In placentas with chronic basal deciduitis combined with iron deficiency anemia, villi were predominantly small-caliber, showing marked distal hypoplasia. The basal plate was thickened, with pronounced lymphoplasmacytic infiltration, focal vascular sclerosis and hyalinosis, leading to significant impairment of uteroplacental blood flow. The villous stroma was compacted and partially fibrotic, with isolated fibrinoid deposits. The number of villous vessels was decreased (hypovascularization), with luminal narrowing or collapse. Some villi exhibited ischemic-dystrophic changes such as stromal shrinkage, trophoblast cytoplasmic vacuolization, and syncytial nuclear pyknosis. The cytotrophoblast displayed degenerative changes, while the syncytiotrophoblast appeared thinned, with focal discontinuities of the covering layer. The intervillous space showed a reduced number of maternal erythrocytes, focal fibrin deposits, and occasional macrophages.

Conclusions. In chronic basal deciduitis, inflammatory involvement of the basal plate and impaired uteroplacental circulation were revealed, manifested by distal villous hypoplasia and moderate trophoblastic degeneration. The combination of chronic basal deciduitis with iron deficiency anemia was associated with more pronounced ischemic-hypoxic changes in the villi, hypovascularization, stromal fibrosis, and trophoblastic degeneration. The obtained morphological data indicate a synergistic effect of inflammatory and hypoxic processes in the placenta, forming the structural basis for the development of placental insufficiency.

Karatieieva S.Yu.

ANATOMICAL FEATURES OF THE THIGH PARAMETERS OF BUKOVYNA STUDENTS

*Department of Anatomy, Clinical Anatomy and Operative Surgery
Bukovinian State Medical University*

Introduction. It is known that the factor that determines success in sports is the morphological features of the structure of the human body.

The aim of the study is to establish the anatomical characteristics of thigh parameters of students of Bukovyna who play football and handball, followed by modeling for sports selection.

Material and methods. Students of higher educational institutions of Bukovyna (n=129), of which young boys - n=69 and young girls - n=60. The subjects were divided into a main group - 89 students who improved by playing football and handball and a control group - 40 students who did not do the sports. Students of the main group, in addition to the physical activity that was included in the program of their specialty during the year, attended sports sections in football and handball during the year. Medium-intensity training took place under the control of a trainer, the frequency of training was 3.43 ± 1.26 days/week (90 minutes each). Students of the control group did not do the sports. The initial survey was conducted in 2021 year, and the same students were resurveyed in 2022 year. All subjects were subjected to an anthropometric study, according to the method of P.P. Shaparenka (thigh circumference in the upper third, in the middle third and in the lower third, body weight, height).

Results. It was found that when comparing the first and second measurement, the thigh circumference indicators at the second measurement (in dynamics after one year) were slightly higher in students who played football (young boys and young girls) in the upper, middle and lower thirds than in students who played handball (for students who played football ± 3.43 cm, for students who played handball ± 2.12 cm). The model for predicting the circumference of the thigh in the upper third on the right: $C_{pr} = \beta_1 + \beta_2 + 0.493w - 0.135h$, where C_{pr} is the circumference of the thigh in the upper third (right), w is body weight, h is height, $\beta_1 = (49.735$ for girls and 44.489 for young men), $\beta_2 = (-1.391$ for the soccer group; -2.321 for the handball group), on the left: $C_{pl} = \beta_1$