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THE PROSPECT OF USING MOBILE APPLICATIONS IN THE FORMATION OF A HEALTHY LIFESTYLE AND DISEASE PREVENTION Bohachova O., Trach V., Hrytskov V.	1026
PROBABILITY OF ILLNESS FOR A NEWBORN FROM A MOTHER ILL WITH COVID-19 Melnyk O., Shvindin N.	1033
JAK INHIBITORS IN VITILIGO: A BREAKTHROUGH IN TREATMENT OR A LIMITED SOLUTION? Chekoi M.O.	1039
CLINICAL AND ANAMNESTIC FEATURES OF THE ORTHOSTATIC HYPOTENSION Toriany S., Zvarych O.	1046
PECULIARITIES OF MODERN DIAGNOSTIC AND TREATMENT OF LARYNGEAL CANCER Scientific research group: Ksonz O.S., Kalashnyk-Vakulenko Yu.M., Yurevych N.O., Lupyr A.V.	1053
DIABETES MELLITUS AND ATHEROGENIC DYSLIPIDEMIA: MODERN APPROACHES TO THE PREVENTION OF ATHEROSCLEROTIC CARDIOVASCULAR COMPLICATIONS Fartushok T., Fartushok N., Fedevych Yu.	1057

ABSTRACTS

COMPARISON OF THE COMPLICATIONS OF EN-BLOCK AND PIECEMEAL ENDOSCOPIC MUCOSAL RESECTION OF LARGE LATERALLY SPREADING TUMORS Tkachov V., Kiosov O.	1069
PROGNOSTIC VALUE OF THALAMIC AMMONIA LEVEL IN POSTMORTEM BRAIN OF PATIENTS WITH LIVER CIRRHOSIS FOR THE PRESENCE OF INTRAVITALY OVERT HEPATIC ENCEPHALOPATHY Shuliatnikova T., Tumanskyi V., Tumanska L.	1072
COMBAT TRAUMATIC BRAIN INJURY: PRINCIPLES OF STABILIZATION AND EVACUATION (ACCORDING TO U.S. DOD PROTOCOLS) Hud V.O., Glek A.M.	1075
MODERN APPROACHES TO PAIN RELIEF IN ABDOMINAL OPERATIONS Grankina V.O., Lantukhova N.D.	1078

SECTION XXX. PHARMACY AND PHARMACOTHERAPY

ABSTRACTS

MARKET ANALYSIS OF PURPLE CONEFLOWER (ECHINACEA PURPUREA (L.) MOENCH) IN THE PHARMACEUTICAL MARKET OF UKRAINE Kubatin V., Gudzenko A., Anzina K.	1081
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PROGNOSTIC VALUE OF THALAMIC AMMONIA LEVEL IN POSTMORTEM BRAIN OF PATIENTS WITH LIVER CIRRHOSIS FOR THE PRESENCE OF INTRAVITALY OVERT HEPATIC ENCEPHALOPATHY

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One of the most dangerous complications of the decompensated liver cirrhosis (LC) is hepatic encephalopathy (HE) type C, which occurs in up to 50% of cirrhotic patients, worsens short-term survival prognosis being a crucial factor of thanatogenesis [1]. Postmortem diagnosis of HE always requires the exclusion of other etiologies of brain failure and is not developed yet [2]. Increased brain tissue ammonia induces specific changes to the neuroglivascular unit (NVU) which lead to HE clinical performance [6]. As have been recently demonstrated [5], brain tissue ammonia level correlates with NVU neuropathological changes, especially in brain regions which are considered as more active in ammonia metabolism, including thalamus [4]. For studying the predictive ability of postmortem ammonia levels in thalamis tissue for the presence of intravital HE, logistic regression analysis was used with ROC curves and the determination of the cutoff threshold. The median values of optical density of HC ammonia precipitates expressed in CUOD (according to Gutiérrez-de-Juan V. method of the morphological determination of ammonia [3]) in

the postmortem brain thalamus of 90 deceased patients with LC were analyzed for the presence or absence of HE Grade1-4 intravital symptoms or the clinical diagnosis of HE in their medical cards. According to the ROC analysis, the postmortem median HC ammonia level in the thalamic tissue > 34.18 CUOD indicated a statistically significant probability (sensitivity = 80.36 %, specificity = 79.41 %, AUC=0.840, $p<0.001$) of the presence of clinical signs of HE during patient's lifetime. Based on the results obtained, the level of postmortem tissue ammonia in thalamus of deceased cirrhotic patients can be used for the retrospective diagnosis of the overt HE type C, although, reliable pathological diagnosis of hepatic encephalopathy requires the presence of the additional ammonia-associated morphological changes of the neurogliovascular unit.

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ПРОГНОСТИЧНА ЦІННІСТЬ РІВНЯ ТАЛАМІЧНОГО АМІАКУ В ГОЛОВНОМУ МОЗКУ ПОМЕРЛИХ ХВОРИХ НА ЦИРОЗ ПЕЧІНКИ ЩОДО НАЯВНОСТІ В НИХ ПРИЖИТТЄВОЇ ПЕЧІНКОВОЇ ЕНЦЕФАЛОПАТІЇ



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