Aim of the study was to investigate influence of iron deficiency on severity and control of asthma in children.

We have examined 227 children aged 6 to 17 years, patients with asthma. The average age of the surveyed patients amounted to (9.87 ± 0.22) years. The diagnosis of asthma was established in accordance with ICD 10 and order of the Ministry of Health of Ukraine on asthma in children no 868 from 08.10.2013 with the recommendations of the ‘Global Initiative on Bronchial Asthma’ (GINA, 2018). The work started after receiving the consent of the patient and his parents to participate in the study in compliance with the provisions of the UN Convention on the Rights of the Child. Materials of the study do not deny the international Code of Medical Ethics (1983) and the laws of Ukraine correspond to the basic bioethical norms of the Helsinki Declaration, adopted by the General Assembly of the World Medical Association, the Council of Europe Convention on human Rights and Biomedicine (1977).

CBC with morphometric parameters (MCV, MCH, MCHC, RBC, RDW, HCT) was performed with the help of Hematology Analyzer Gobas Micros 18. Iron complex (serum iron, ferritin, transferrin receptors and sTfR/log ferritin) ELISA kits. Statistical methods (SPSS Statistic 20th edition).

In assessing the risk of asthma in various severity depending on the serum iron content, there is definitely a significant increase in chances that the persistence of moderate to severe and severe degrees in children with iron content in blood less than 10 μmol/L in 1.537 (OR = 1.537; 95% CI 1.061 – 3.106) and 2.375 (OR = 2.375; 95% CI 1.870 – 6.482) times respectively.

While children with no iron deficiency grew the chances of persistent mild asthma in 1.916 times (OR = 1.916; 95% CI 1.696 – 2.171).

The level of control of progress of the asthma also depended on the iron content of serum. Thus, the risks of uncontrolled asthma have increased 7.852 times in children with existing iron deficiency (less than 10 μmol/l) (OR = 7.852; 95% CI 3.050 – 20.213). Children with iron deficiency reliably decreased the chances of controlled asthma in 1.472 times (OR = 0.528; 95% CI 0.414 – 0.673), and in children with normal serum iron, the chances of a high level control of a course of asthma increased by 4.146 times (OR = 4.146; 95% CI 1.923 – 8.938).

In children with an asthma, iron deficiency reliably decreased the chances of controlled disease compared with patients with normal serum iron in 1.472 times.

Introduction VKDB is a rare life threatening bleeding disorder that can occur after birth caused by vitamin K deficiency. VKDB is categorised according to the timing of first symptoms: early onset occurs within 24 hours of birth, classic onset occurs within two to seven days, late onset occurs within two weeks to six months. It’s now common practice babies to be given vitamin K-1(phytomenadione), shortly after birth. Early and classical VKDB are relatively common, occurring in 1 in 60 to 1 in 250 newborns. Late VKDB is much rarer, occurring in 1 in 25,000 infants.

Case We herein report a case of a twin boy, born at term who presented as 34 days of age with VKDB.

Clinical The child presented with a 1 day history of fever, coryzal and decreased feeding. No respiratory distress. The child was screened for sepsis and started on IV Antibiotics. Lumbar puncture and Urine Culture negative. The following day the child developed 2 purpuric lesions on his chest wall. Noted by be oozing blood from IV cannula and LP sites. Blood noted on nappy. Investigations showed a drop in Hb from 86 to 58g/l. INR 5.1 Treatment with FFP, Packed red cells, Vitamin K and Transexamic acid was given. Further discussion with parents revealed that they had declined Vitamin K at birth for their child. The child was transferred to our local PICU where he required intubation and ventilation for increasing respiratory distress. CXR showed opacity over the right lung with mediastinal shift. MRI thorax multi-cystic mass in the right hemithorax with evidence of haemorrhage. Malignant changes could not be ruled out. The child proceeded to an open thoracotomy. Large gelatinous mass removed. Exubated the following day. Histopathology showed blood clot with no evidence of malignancy.

Conclusion Although routine use of neonatal vitamin K has reduced the incidence of VKDB clinicians should remain vigilant and remember that not all children will have received this treatment. This case shows a rare complication of extensive intrathoracic haemorrhage although this case had a positive outcome it should be remembered that VKDB has a significant mortality even with aggressive treatment.
and receiver operating characteristic (ROC) analysis of most different discriminating indices (Matos & Carvalho, Mentzer Index, RDW Index, Green and King, Ehsani Index) used in differential diagnosis of these two diseases was calculated using MedCalc.v15.2 statistical software. Nonparametric nature of the CBC sample was assessed using the Kolmogorov–Smirnov test. Mann–Whitney test was used to investigate differences between the two groups. Area under the ROC curve was calculated for each index and their differences were assessed. A p-value < 0.05 was considered significant.

Among the 5 tested indices, the Ehsani index correctly diagnosed the highest number of children with β-thalassemia, but failed to properly recognize children with IDA (sensitivity 92%, specificity 46%). The most commonly used Mentzer index showed similar results (sensitivity 88%, specificity 48%). The best ratio between sensitivity and specificity was observed for the new Matos & Cavalho index (sensitivity 74%, specificity 88%) with highest area under the ROC curve. Pairwise comparison of ROC curves observed a significant difference between Matos & Cavalho index and the remaining four tested indices (RDWI p<0.0008; Ehsani p<0.0001; Green and King p<0.0001; Mentzer p<0.0001). Kolmogorov–Smirnov test for normal distribution of CBC values showed a p>0.05 while Mann–Whitney U test for independent samples showed a p<0.05 difference between IDA and β-thalassemia.

Our results show that the most optimal index for discriminating between β-thalassemia and IDA in analysed children is Matos & Cavalho Index.

Therefore, it is more appropriate for discernment than the other analysed indexes. All indexes with low specificity (Mentzer, Ehsani, Green and King) were of low validity as they have a low proportion of IDA correctly identified as such.

Lymphomas are the third most common malignant disease in childhood, after leukemia and brain tumors. The aim of this study is to show stratification by gender and age as well as long term survival in pediatric patients diagnosed with Non-Hodgkin Lymphoma in our center.

Our retrospective analysis included 85 children with newly diagnosed NHL from January 1, 1997 to December 31, 2016. They all have been diagnosed and treated at the Department of Pediatric Hematology and oncology, University Hospital Centre Zagreb.

Out of 85 children with newly diagnosed NHL 48 of them suffered from B-cell NHL (n = 48; 56%) while the rest of them had T-cell lymphoblastic lymphoma (T-LBL) (n = 20; 24%) or Anaplastic large-cell lymphoma (ALCL) (n = 17; 20%). There were 25 girls and 50 boys (age 3 – 17 years). Overall survival (OS) for the entire group was 78.82%. Diagnose based survival is in the favor of T-LBL – 85.00% in comparison to 81.25% in B-NHL and 64.71% in ALCL.

Our survival rates are not very different from the ones in the other European countries. We expect improved survival rates after introducing novel treatment that would optimize therapeutic effect and at the same time minimize the risk of severe late toxic effects.

Haemophilia are rare, inherited and severe bleeding disorder characterised with factor VIII or factor IX deficiency. The estimated glomerular filtration rate (eGFR) is one of the best-performing methods to evaluate kidney function. Glomerular filtration rate cannot be directly measured; however, it can be determined by measuring the clearance of an ideal filtration marker or estimated using predictive formulas. The aim of this preliminary study was to calculate eGFR of paediatric haemophilia patients treated in our centre and assess the correlation of eGFR calculated by creatinine-based and cystatin C-based equations.

In our study, we included 36 boys with moderate or severe haemophilia. Out of a total of 36 patients, 27 had haemophilia A and 9 had haemophilia B.

Their mean age was 11.2±4.31 years, with a range from 3 to 18 years. We investigated the correlation and agreement between two eGFR equations (creatinine-based ‘Bedside Schwartz’ equation and cystatin-C based equation). Along with applying correlation and linear regression tests, the Bland Altman test was performed to assess the agreement of the results.

Statistically significant differences were found between the mean eGFR values (p<0.001). No significant correlation was found between the two methods (p=0.07), Bland-Altman analysis results showed higher mean eGFR values of bedside Schwartz equation compared to the cystatin-C based formula, meaning that a significant disagreement was found between those two equations. However, within the group of haemophilia B patients, statistically significant positive correlations between the two methods were found, although still a disagreement was observed. Due to the observed disagreements between eGFR within haemophilia patients, further research is needed to find the optimal measure of eGFR. We suggest extending this study on a larger cohort of patients and include other possible eGFR equations.