percentage, a semi-quantitative evaluation of Glasgow Microenvironment Score[7] was performed. Also, Glasgow Prognostic Score, that is widely known as a systemic inflammatory-based marker, was determined for each patient.[8]

Results: Diabetic patients presented a significant higher glycaemia than the control patients (190.1 ± 13.6 mg/dL vs 98.2 ± 3.6 mg/dL, $p < 0.001$, respectively). Decreased survival rates were observed in diabetic patients (611.5 vs 916.0, $p =$ ns). Tumours exhibited increased fibrosis relatively to the adjacent mucosa in both groups and diabetic patients (N: 9.362 ± 1.337; T: 12.29 ± 1.407) presented higher fibrosis levels than the non-diabetic patients (N: 7.165 ± 1.017; T: 10.97 ± 1.076).

Conclusion: Expected results: Identifying the distinct features that characterize GC of DM2 patients compared to nondiabetic patients (namely fibrosis, angiogenesis, inflammation, and oxidative stress biomarkers) will enable to study this subset of GC patients and unravel key mechanisms behind the relationship between DM2 and GC.

References

1. Ogurtsova K, et al. IDF Diabetes Atlas: Global estimates for the prevalence of diabetes for 2015 and 2040. Diabetes Res Clin Pract. 2017;128:40–50.
2. Vigneri R. Diabetes: diabetes therapy and cancer risk. Nat Rev Endocrinol. 2009;5:651–2.
3. Sekikawa A, et al. Diabetes mellitus increases the risk of early gastric cancer development. Eur J Cancer. 2014;50:2065–71.
4. Ikeda F, Kiyohara Y. Helicobacter pylori infection and Hyperglycemia/Diabetes are associated with an increased risk of Gastric Cancer. Gan To Kagaku Ryoho. 2015;42:529–33.
5. Shen Z, et al. Glycemic changes after gastrectomy in non-morbidly obese patients with gastric cancer and diabetes. Hepatogastroenterology. 2015;62:245–50.
6. Ferlay JSI, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, et al. Cancer incidence and mortality worldwide: IARC CancerBase No. 11. GLOBOCAN 2012 v1.0; 2013. Available from: http://globocan.iarc.fr [cited 24.01.17].
7. Zhou ZH, et al. The prognostic value and pathobiological significance of Glasgow microenvironment score in gastric cancer. J Cancer Res Clin Oncol. 2017;143:883–94.
8. Zhang CX, et al. Association between pretreatment Glasgow prognostic score and gastric cancer survival and clinicopathological features: a meta-analysis. Onco Targets Ther. 2016;9:3883–91.

http://dx.doi.org/10.1016/j.pbj.2017.07.120

PS229

Circulating EVs for AML minimal residual disease biomarkers detection

P.C. Nunes [1,*], H.R. Caires [2], M.A. Sobrinho-Simões [3], M.H. Vasconcelos [4]

[1] *Cancer Drug Resistance Group, IPATIMUP – Institute of Molecular Pathology and Immunology of the University of Porto, Portugal; i3S – Instituto de Investigação e Inovação em Saúde, University of Porto, Portugal; ICBAS-UP – Institute of Biomedical Sciences Abel Salazar of the University of Porto, Portugal*
[2] *Cancer Drug Resistance Group, IPATIMUP – Institute of Molecular Pathology and Immunology of the University of Porto, Portugal; i3S – Instituto de Investigação e Inovação em Saúde, University of Porto, Portugal*
[3] *Cancer Drug Resistance Group, IPATIMUP – Institute of Molecular Pathology and Immunology of the University of Porto, Portugal; i3S – Instituto de Investigação e Inovação em Saúde, University of Porto, Portugal; FMUP – Faculty of Medicine of the University of Porto, Portugal; HSJ – Hospital de São João, Porto, Portugal*
[4] *Cancer Drug Resistance Group, IPATIMUP – Institute of Molecular Pathology and Immunology of the University of Porto, Portugal; i3S – Instituto de Investigação e Inovação em Saúde, University of Porto, Portugal; FFUP – Faculty of Pharmacy of the University of Porto, Portugal*
E-mail address: pnunes@ipatimup.pt
(P.C. Nunes).

Aim: We propose to evaluate the feasibility of a peripheral blood EV-based liquid biopsy method for AML disease monitoring in real time with molecular precision.

Introduction: Acute myeloid leukemia (AML) is a hematopoietic stem cell disorder with high mortality rate mainly due to the high frequency of post-treatment relapse. Minimal residual disease (MRD) determination in AML patients receiving treatment is useful to assess chemotherapy response and predict relapse. One approach to upgrade the current invasive MRD monitoring (traditionally based on bone marrow aspirates/biopsies) is to use methods that identify cancer-associated biomarkers in patients' blood. Recently, extracellular vesicles (EVs) have been increasingly recognized as a potential source of biomarkers, since the levels of EVs are markedly increased in cancer patients' blood and those EVs potentially carry molecular signatures associated with specific cancer phenotypes.

Methods: The profile of EVs isolated from AML patients' blood plasma collected from paired AML diagnostic and complete remission samples is being compared and correlated with clinical data. A size-exclusion chromatography (SEC) method was optimized to isolate the plasmatic EVs. The EVs profile is then characterized according to their size, plasmatic concentration, morphology and protein content.

Results: EVs with decreasing size were successfully isolated between SEC fractions 3 to 6, with a size ranging from 300 nm to 30 nm, respectively. Fraction 7 presented the smaller EVs, although mixed with some plasmatic protein contaminants. The expression of EVs markers such as CD63, HSP70 or Syntenin-1 was confirmed and allow to distinguish EV subpopulations between fractions 3 to 7. The expression of leukemia-specific markers is currently being studied in the EVs isolated from the paired AML blood samples.

Conclusion: The presented EV-based liquid biopsy proposed method for AML monitoring could unravel biomarkers for diagnostic and prognostic purposes in AML patients.

http://dx.doi.org/10.1016/j.pbj.2017.07.121

PS232

The association of Generalized Epilepsy with Febrile Seizures plus (GEFS+) with FEB1 gene: A new insight to the etiology of GEFS+

Ali Rafati [1,*], Shahram Teimourian [2]

[1] *Student Research Committee, School of Medicine, Iran University of Medical Sciences, Tehran, Iran*
[2] *Department of Medical Genetics, Iran University of Medical Sciences Tehran Iran*
E-mail address: rafatiali1995@gmail.com
(A. Rafati).

Aim: We aimed to carry out a linkage analysis in 6 Iranian families to find an association between the FEB1 and GEFS+.

Introduction: Generalized Epilepsy with Febrile Seizures plus (GEFS+), is a group of genetic epilepsy syndromes, likely to commence in the first year of life, in which, patient presents with febrile and tonic-clonic seizures. GEFS+ is associated with an autosomal dominant pattern and is caused by mutations in SCN1B which encodes the beta 1 subunit of sodium channels.

Methods: We conducted a case–control study in January 2017, with 6 families, with a total of 35 members entering the study with convenience sampling method, within which, 12 members were as the case group, diagnosed with autosomal dominant GEFS+, hospitalized in Ali Asghar Children's hospital, Iran University of Medical Sciences. 23 family members with no diagnosed GEFS+ were as the control group. Written consent was obtained from all family members according to the protocols of the ethics committee of the university. Afterwards, using D8S533 marker for FEB1 gene, with a Logarithms of Odds (LOD) of 3.16, two-point linkage analysis and haplotype reconstruction was carried out using MLINK program and Simwalk2 respectively.

Results: Haplotype reconstruction analysis in the case group revealed a haplotype associated with GEFS+. However, in the control group, not such an haplotype was seen and the difference between two groups was significant ($p < 0.05$).

Conclusion: In this study we reported a strong linkage between GEFS+ and FEB1 gene. This may clarify the etiology underlying GEFS+ and gives us chances in GEFS+ screening using FEB1.

http://dx.doi.org/10.1016/j.pbj.2017.07.122

Physiology & Immunology Poster Session
Thursday, September 14th, 16h00

PS037

Genetical variability of VP1 gene of BK virus in HIV-infected patients

O. Lijeskić [1,*], S. Leštarević [1], D. Karalić [2]

[1] *School of Medicine, University of Belgrade, Portugal*
[2] *Institute of Microbiology and Immunology, School of Medicine, University of Belgrade, Portugal*
E-mail address: oljalol2@gmail.com
(O. Lijeskić).

Aim: The aims of this study were: to determine the prevalence of BK viruria in HIV-infected patients, to determine the distribution of BKV subtypes and the presence of nucleotide substitutions and mutations in the VP1 gene of BKV isolates.

Introduction: A broad range of diseases associated with BK virus (BKV) such as nephritis, haemorrhagic cystitis, encephalitis, retinitis and pneumonia have been reported in HIV-infected patients over the last few years. However, these diseases do not occur in all HIV-infected patients, suggesting that other factors, such as genetic variability of BKV, can contribute to their occurrence. Mutations in the BC loop of the VP1 gene may lead to selection of more aggressive variants of BKV.

Methods: The study included 50 HIV-infected patients. Seminested PCR was used for amplification of 290-nt fragment within the VP1 gene and all the positive PCR products were then directly sequenced. The sequence analysis was performed by using the appropriate bioinformatics tools.

Results: The frequency of BK viruria in HIV-infected patients was 56%. The predominant BKV subtype was I, followed by subtype IV. The majority of mutations were located within BC loop of VP1. The most frequent mutation was E82D.

Conclusion: The increased levels of BKV replication are associated with a higher incidence of mutations in the BC loop of VP1, and mutations in this domain may lead to changed tropism and the selection of more aggressive variants of BKV. Further studies are needed in order to select the patients with a higher risk of developing BKV associated-diseases.

http://dx.doi.org/10.1016/j.pbj.2017.07.123

PS182

Cellular interaction in central and peripheral immune organs due to chronic light stress

Bocharova Tetiana

Kharkiv National Medical University, Ukraine
E-mail address: bochata@ukr.net.

Aim: Study cellular interaction in central and peripheral immune organs at prolonged all-day illumination in an experiment on rabbits.

Introduction: Prolonged all-day illumination is considered nowadays as one of the stress-factors for the living organism and causes malfunctions of the neuroendocrine system and may initial immune dysfunction.

Methods: Experimental rabbits ($n = 10$) were in artificial lighting in the day and electric lighting at night during 12 months. Control animals ($n = 5$) were kept in natural day and night lighting conditions. Cell density in immune organs (thymus, bone marrow, spleen) were measured in surface area which was determined by a rectangle $100 \times 100\,\mu m$. The results were processed with standard statistical methods and reported as mean $\pm$ standard deviation (SD).

Results: The cell density in the thymus and the bone marrow was decreased: in the cortex of the thymus was 359.6 ± 2.9, in the medullar part – $250,8 \pm 2,9$, in the bone marrow – 176.4 ± 2.9 (cells in $100 \times 100\,\mu m$). An intensified formation of the connective tissue, an increasing of involutive processes and degenerative changes of lymphocytes were microscopically found in the spleen and the thymus. The cell density in the spleen was decreased too: in T zone – 235.8 ± 3.7, in B-zone – 159.5 ± 1.9 (cells in $100\,\mu m \times 100\,\mu m$). The causes of these changes, probably, may be decrease of the differentiation and migration of lymphocytes as result negative influence of the prolonged light on central immune organs.

Conclusion: These changes in organs of the immune system indicate both a premature aging of the spleen and the thymus and probably of all the immune system. Significant reduction in cell density in the immune organs associate with negative effects of the chronic light stress and leads to expressed immune dysfunction.

http://dx.doi.org/10.1016/j.pbj.2017.07.124

PS217

Intermittent low-level lead exposure causes anxiety and cardiorespiratory impairment

L. Shvachiy [1,*], V. Geraldes [1,2], Â. Amaro-Leal [1], I. Rocha [1,2]

[1] *Centro Cardiovascular da Universidade de Lisboa; Faculdade de Medicina, Universidade de Lisboa, Portugal*
[2] *Instituto de Fisiologia, Faculdade de Medicina, Universidade de Lisboa, Avenida Professor Egas Moniz, 1649-028 Lisboa, Portugal*
E-mail address: shvachiy.liana@gmail.com
(L. Shvachiy).