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My research focuses on Coagulation and thrombosis clinical and basic science aspects

1. **Idiopathic thrombocytopenic purpura (ITP)**

   This disease involves the immune system as well as the coagulation system. We have studied both aspects and have shown that non-chronic and chronic ITP have a different pathophysiology manifested as different immune and apoptotic markers.

2. **Rare bleeding disorders: evaluation of personalized therapy tailoring using global coagulation assays**

   As there is no standard test that can predict bleeding or thrombosis in children with rare bleeding disorders receiving various therapies, my research aimed at the need to define better laboratory tests in the era of novel therapies. We studied rare diseases including Glanzman thrombosthenia, Factor V deficiency and Hemophilia. Among patients with hemophilia, coagulation factors' inhibitors pose a specific challenge- we are currently trying to predict inhibitory antibodies evolution using immune markers of our hemophilia patients, obtained at diagnosis.

3. **Gene therapy using Viral vectors**

   In 2019 I underwent a research fellowship in Mount Sinai in Prof. Walsh's Lab where I studied how to clone and produce Recombinant Adeno Associated virus for rare bleeding disorder. Our laboratory, together with international collaborators, aims to find AAV directed gene therapy solutions for rare disorders using murine models.

Selected publications

1. Strauss T, Elisha N, Ravid B, Rosenberg N, Lubetsky A, **Levy-Mendelovich S**, Morag I, Nowak Göttl U, Kenet G. Activity of Von Willebrand factor and levels of VWF-cleaving protease (ADAMTS13) in preterm and full term neonates. Blood Cells Mol Dis. 2017;67:14-17.

2. Livnat T, Budnik I, **Levy-Mendelovich S**, Avishai E, Misgav M, Barg AA, Lubetsky A, Brutman-Barazani T, Kenet G. Combination of hemostatic therapies for treatment of patients with hemophilia A and inhibitors. Blood Cells Mol Dis. 2017;66:1-5.

3. **Levy-Mendelovich S**, Lev A, Aviner S, Rosenberg N, Kaplinsky C, Sharon N, Miskin H, Dvir A, Kenet G, Schushan IE, Somech R. Quantification of specific T and B cells immunological markers in children with chronic and transient ITP. Pediatr Blood Cancer. 2017;64(12).

4. **Levy-Mendelovich S**, Barg AA, Rosenberg N, Avishai E, Luboshitz J, Misgav M, Kenet G, Livnat T. Treatment tailoring for factor V deficient patients and perioperative management using global hemostatic coagulation assays. Blood Cells Mol Dis. 2018;71:5-10.

5. Barg AA, Hauschner H, Misgav M, Lubetsky A, **Levy-Mendelowitz S**, Livnat T, Avishai E, Rosenberg N, Kenet G. A novel approach using ancillary tests to guide treatment of Glanzmann thrombasthenia patients undergoing surgical procedures. Blood Cells Mol Dis. 2018;72:44-48.

6. Barg AA, **Levy-Mendelovich S**, Avishai E, Dardik R, Misgav M, Kenet G, Livnat T. Alternative treatment options for pediatric hemophilia B patients with high-responding inhibitors: A thrombin generation-guided study. Pediatr Blood Cancer. 2018;65(12):e27381.

8. **Levy-Mendelovich S**, Levy T, Budnik I, Barg AA, Rosenberg N, Seligsohn U, Kenet G, Livnat T. Low Concentrations of Recombinant Factor VIIa May Improve the Impaired Thrombin Generation of Glanzmann Thrombasthenia Patients. Thromb Haemost. 2019;119(1):117-127.

9. Barg AA, Avishai E, Budnik I, **Levy-Mendelovich S**, Barazani TB, Kenet G, Livnat T. Emicizumab prophylaxis among infants and toddlers with severe hemophilia A and inhibitors-a single-center cohort. Pediatr Blood Cancer. 2019;66(11):e27886.

10. **Levy-Mendelovich S**, Livnat T, Barg AA, Kidon M, Brutman-Barazani T, Kenet G. Allergy and inhibitors in hemophilia - a rare complication with potential novel solutions. Blood Cells Mol Dis. 2020;80:102370.

11. Barg AA, Dardik R, Levin C, Koren A, **Levy-Mendelovich S**, Pode-Shakked B,Kenet G. Severe Protein C Deficiency due to Novel Biallelic Variants in PROC and Their Phenotype Correlation. Acta Haematol. 2021;144(3):327-331.

12. **Levy-Mendelovich S**, Aviner S, Sharon N, Miskin H, Yacobovich J, Kenet G, Hauschner H, Rosenberg N. Pediatric immune thrombocytopenia: apoptotic markers may help in predicting the disease course. Pediatr Res. 2021;90(1):93-98.

13. Livnat T, Weinberger Y, Fernández JA, Bashir A, Ben-David G, Palevski D, **Levy-Mendelovich S**, Kenet G, Budnik I, Nisgav Y, Griffin JH, Weinberger D. Activated Protein C (APC) and 3K3A-APC-Induced Regression of Choroidal Neovascularization (CNV) Is

Accompanied by Vascular Endothelial Growth Factor (VEGF) Reduction. Biomolecules. 2021;11(3):358.

14. Lev A, Lee YN, Sun G, Hallumi E, Simon AJ, Zrihen KS, Levy S, Beit Halevi T, Papazian M Shwartz N, Somekh I, **Levy-Mendelovich S**, Wolach B, Gavrieli R, Vernitsky H, Barel O Javasky E, Stauber T, Ma CA, Zhang Y, Amariglio N, Rechavi G, Hendel A, Yablonski D, Milner JD, Somech R. Inherited SLP76 deficiency in humans causes severe combined immunodeficiency, neutrophil and platelet defects. J Exp Med. 2021;218(3):e20201062

15. **Levy-Mendelovich S**, Barbash Y, Budnik I, Levy-Erez D, Somech R, Soffer S,Furth S, Klang E. Pediatric literature trends: high-level analysis using text- mining. Pediatr Res. 2021;90(1):212-215. Erratum in: Pediatr Res. 2021; PMID: 33731817.

16. **Levy-Mendelovich S**, Brutman-Barazani T, Budnik I, Avishai E, Barg AA, Levy T,Misgav M, Livnat T, Kenet G. Real-World Data on Bleeding Patterns of Hemophilia A Patients Treated with Emicizumab. J Clin Med. 2021 Sep 22;10(19):4303.

17. Barg AA, **Levy-Mendelovich S**, Budnik I, Mandel-Shorer N, Dardik R, Avishai E, Brutman-Barazani T, Dvir Ifrah A, Oren-Malek L, Yacobovich J, Gilad O, Nakav S, Fruchtman Y, Revel-Vilk S, Miskin H, Kenet G. Pediatric severe Factor XI deficiency – a multicenter study. Pediatric Blood and Cancer. Accepted, December 2021.