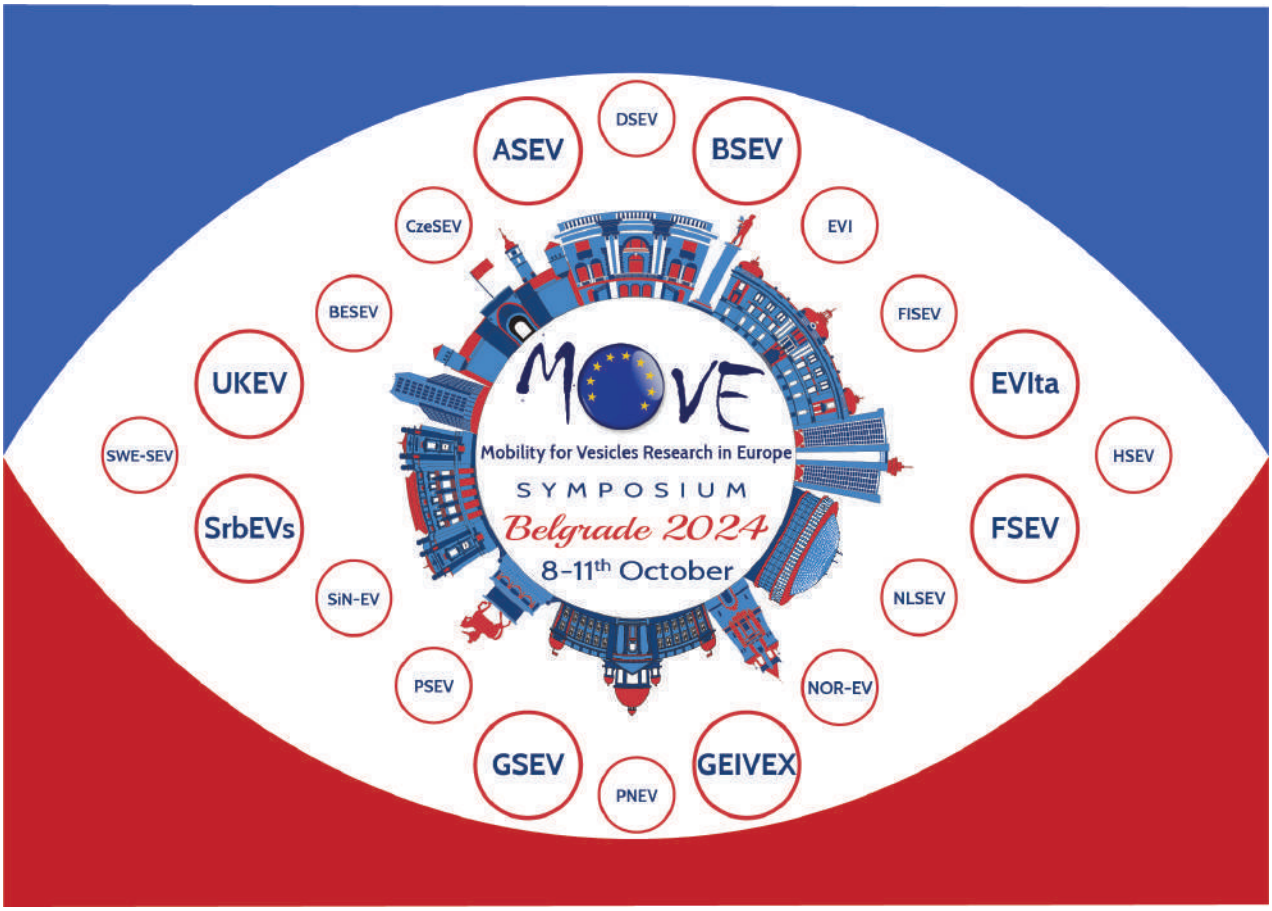
2nd MOVE Symposium



presented by

European National Societies for Extracellular vesicles

Abstract book

2nd MOVE Symposium

8-11 October 2024, Belgrade, Serbia

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Austrian Society for Extracellular Vesicles, ASEV
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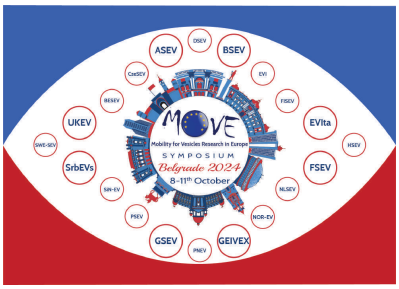

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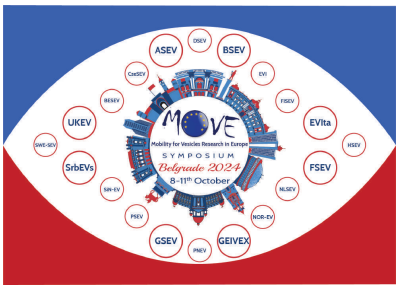

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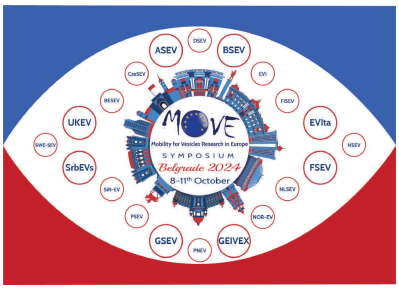

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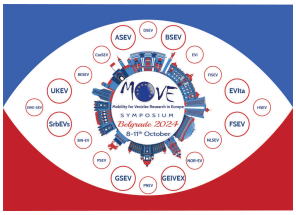
Friday, 11.10.2024.

12:05	Session 11 BM-2	**EV-based biomarkers 2** Chairs: Jason Webber, Sanja Goč	
O-BM-5	miR-146a-5p and miR-21-5p from extracellular vesicles as potential biomarkers in gestational diabetes		Zorana Dobrijević
O-BM-6	Brain-derived blood extracellular vesicles as potential biomarkers in multiple sclerosis (MS): Pilot results from relapsing MS patients receiving anti-CD20 therapy		Shamundeeswari Anandar
O-BM-7	Tumour-Derived Extracellular Vesicles Enriched in CAIX Indicate Hypoxia in Drug-Sensitive and Drug-Resistant Breast Cancer		Rawan Almasri

12:50	Session 12 HD-3	**EVs in health and disease 3** Chairs: Saara Laitinen, Vendula Pospichalova	
O-HD-9	Influence of platelet extracellular vesicles on T cell function and endothelial integrity in allergic inflammation		Elena Izquierdo
O-HD-10	Mechanisms of extracellular vesicle uptake in G. intestinalis and host cell interactions: role of clathrin and caveolin-mediated endocytosis		Marcel Ivan Ramirez Araya
O-HD-11	Endothelial cell derived extracellular vesicles in chemotherapy		Giulia Artemi

13:35	**Awards and Closing remarks**



miR-146a-5p and miR-21-5p from extracellular vesicles as potential biomarkers in gestational diabetes

Jovana Stevanović[1], Ognjen Radojičić[2], Ninoslav Mitić[3], Ana Penezić[1], Dragana Robajac[1], Miloš Šunderić[1], Goran Miljuš[1], Danilo Četić[1], Milica Mandić[2], Daniela Ardalić[2], Vesna Mandić Marković[2,4], Željko Miković[2,4], Olgica Nedić[1], Zorana Dobrijević[1]

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Introduction: The importance of dysregulation of the anti-oxidative system as the driving force of severe damage and pregnancy complications in gestational diabetes (GDM) is well supported by numerous lines of evidence. MicroRNA-based regulatory mechanism demonstrate impairment associated with GDM, as well as disturbances related to the presence of (glyco)oxidative stress ((g)OS) interconnected with inflammation (IFM). Therefore, we hypothesized that microRNAs may act as potential sensors and/or effectors of (g)OS/IFM in GDM and we selected known (g)OS/IFM-associated microRNAs mir-146a-5p and miR-21-5p as candidates for GDM biomarker analysis. The aim was to assess the biomarker potential of these microRNAs from serum-derived extracellular vesicles (EVs).

Methods: EVs were isolated by differential centrifugation from serum of 36 patients with GDM and 36 healthy controls (pregnancy weeks 24-30). EVs sizing and quantification were conducted by nanoparticle tracking analysis, while the shape and size were confirmed by transmission electron microscopy. The presence of CD63 in EVs isolates was determined by dot-blot and Western blot. Quantitative RT-PCR was used for relative quantification of mir-146a-5p and miR-21-5p.

Results: Both miR-146a-5p and miR-21-5p were found to be significantly upregulated in GDM samples ($p=0.014$ and $p=0.017$, respectively). More prominent was the increase in the expression of miR-21-5p, which was two-fold, while the expression levels of these microRNAs in GDM EVs were correlated ($r=0.49$). The expression of miR-146a-5p negatively correlated with the values of anthropometric characteristics of the newborn of GDM patients. MiR-21-5p, on the other hand, showed correlation with CRP values in GDM patients, while in controls it negatively correlated with newborn weight and BMI and positively with the values of maternal HOMA index.

Conclusion: The presented results illustrate the potential of (g)OS/IFM-related microRNAs serve as indicators of GDM. Results suggesting that the expression of mir-146a-5p and miR-21-5p in EVs correlates with newborn characteristics warrants the evaluation of their predictive potential in a larger study.

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