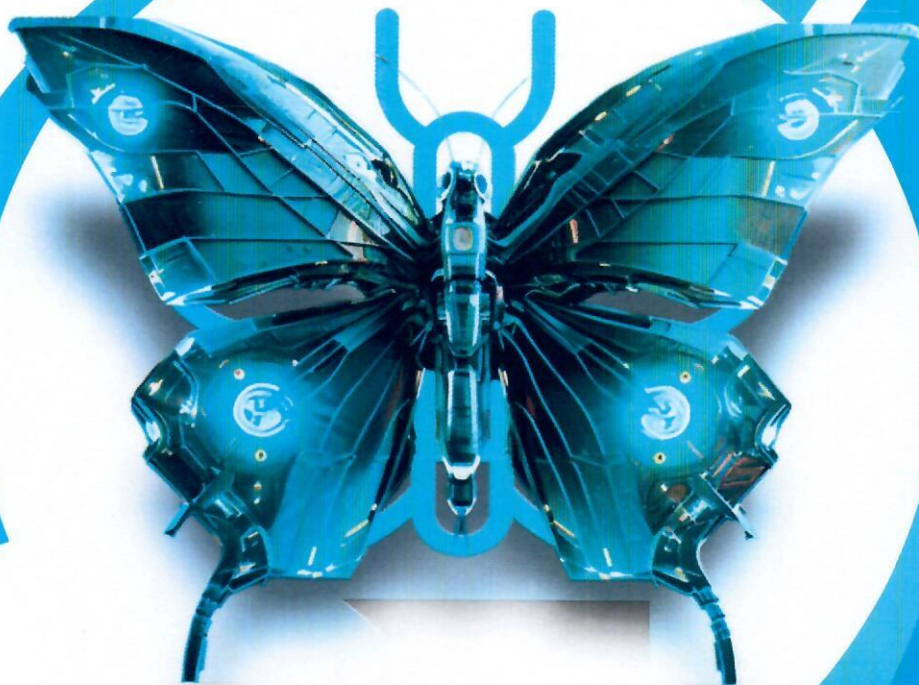


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ABSTRACTS

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RADIONUCLIDE DIAGNOSIS AND THERAPY IN CHILDHOOD NEUROBLASTOMA WITH DIAGNOSTIC SINGLE CENTRE EXPERIENCE

Branislava Radović¹

¹ Center for Nuclear Medicine, Clinical Center of Serbia, Belgrade, Serbia

Neuroblastoma is the most frequent solid extra cranial childhood malignancy, usually affecting children under five. It arises from neural crest cells with neuroendocrine features and is characterized by the overproduction of catecholamines. The clinical presentation of neuroblastoma can vary from spontaneous regression to aggressive growth and death. The latest staging system utilized for neuroblastoma is the International Neuroblastoma Risk Group Staging System (INRGSS), which relies on preoperative imaging and image-defined risk factors.

Radiopharmaceuticals of interest in the evaluation of neuroblastoma are [¹²³I/¹²⁴I/¹³¹I] mIBG, [¹⁸F] FDOPA, [⁶⁸Ga] DOTA peptides, [¹⁸F] FDG. The efficacy of each radiopharmaceutical is determined by distinct neuroendocrine cell uptake mechanisms. The cornerstone of neuroblastoma diagnosis is mIBG scintigraphy, which facilitates both PET imaging and therapy.

Neuroblastoma cells also overexpress somatostatin receptors, thus the peptide receptor theranostic concept may be employed in treatment. Scintigrams obtained through mIBG are semi-quantified by either the Curie or the International Society of Paediatric Oncology Europe Neuroblastoma (SIOPEN) scoring systems. As Serbia is a member of SIOPEN (SERPHO Serbian Society for Paediatric Hemato-Oncology), the SIOPEN semi-quantitative scoring system is used rather than Curie system for mIBG scintigram evaluation.

The Centre for Nuclear Medicine with PET of UCCS reintroduced mIBG scans in neuroblastoma patient evaluation in 2007. Since then, 190 children with neuroblastoma have been diagnosed, and over 350 scintigrams were semi-quantified by SIOPEN score, both soft tissue and bone score.

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