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Steroids in pediatric neurological disorders

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The effects of corticosteroids in child neurology practice are legion based on their immunosuppressive and anti-inflammatory actions. Amongst pediatric epilepsies, corticosteroids are an established treatment for non-tuberous West syndrome and are effective in Landau-Kleffner syndrome and continuous spike waves in slow-wave sleep, Rasmussen's encephalitis and acute exacerbations including episodes of non-convulsive status-epilepticus. Adjunctive corticosteroids reduce hearing-loss and neurological sequelae in Hemophilus meningitis in resource-rich countries; reduce death and sequelae in HIV-negative tubercular meningitis and paradoxical tuberculomas; reduce vasogenic edema accompanying tumors, inflammatory conditions, infectious granulomas (neurocysticercosis) and surgical manipulation. Steroid-induced immune-suppression dictates their role in autoimmune conditions such as myasthenia gravis, cerebral vasculitis, autoimmune encephalitis, steroid-responsive encephalopathies and demyelinating disorders. Usefulness of short courses of corticosteroids in Bells's palsy, refractory-shock, Steven-Johnson syndrome and vestibular neuritis is established. Steroids are also used in Duchenne's muscular dystrophy. There is increasing evidence favouring the systemic use of the new class of "neuroactive steroids" and pharmacological modulation of their production by brain cells to promote neuroprotection. However, the initial "dramatic" improvement due to anti-inflammatory action and drug-induced euphoria without objective measurements is misleading and leads to the misuse of steroids in clinical practice. Although there is no documented beneficial effect of steroids in bacterial meningitis in resource-poor countries and their role in HIV-positive tubercular meningitis, tuberculomas without meningitis and spinal tuberculosis is unclear, yet adjunctive steroids are commonly misused in these conditions. Frequent short-term "rescue" use in migraine or multiple sclerosis is not evidence-based. Steroids are not routinely indicated in traumatic brain injury; may be detrimental in ischemic lesions, cerebral malaria and in intracranial hemorrhage. Excessive steroids in non-ambulatory dystrophic patients may lead to respiratory infections, bone demineralization and uncontrollable obesity. A pragmatic evidence based use of steroids balancing benefits with side-effects is warranted.

Biography

Pratibha Singhi is Professor and Chief, Pediatric Neurology and Neuro-Development at the Post Graduate Institute of Medical Education and Research Chandigarh. She is also the Honorary Chief Consultant at Prayas – the Rehabilitation Centre for Disabled children, Chandigarh since 1985. She has also worked as locum consultant Neurologist at the Great Ormond Street Hospital, London in 2005 and 2008. She did her MD Pediatrics from AIIMS, New Delhi and received training in Pediatric Neurology, Epilepsy and Developmental Pediatrics at Royal Hospital for Sick Children Edinburgh, and Royal Victoria Infirmary, Newcastle Upon Tyne, UK 1991 and Johns Hopkins Hospital Baltimore, USA. She has done original research in the field of CNS infections, Neuro-developmental disorders and epilepsy. She has conducted several research projects including those from WHO, ICMR, ICSSR, PGI, and INDO UK, INDO-EU and INDO-Swedish collaborative projects. She has 304 research publications and has written/edited 3 books including the ICNA book on CNS Infections. She has been an invited speaker in over 300 conferences. She is an Editorial Board Member, Guest Editor and Reviewer of several international and national journals. She has received several research awards and research fellowships. She is the National Delegate for India for AOCNA and a member of the Executive Board of ICNA. She is also a Task Force/ Advisory Board Member in various scientific and academic councils.

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