**Abstract**

**Presentation title:**

**Treatment of spasticity in children with acquired or congenital brain injury**

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**Presentation type:** Oral presentation

**Abstract (250-300 words):**

Spasticity is a major cause of disability in children with congenital or acquired brain damage. Spasticity, resulting from the neurological disorder of brain injury, describes a pathological condition, the central feature of which is involuntary and prolonged muscle contraction caused by changes in central and peripheral afferent inputs to spinal motor neurons, changes in tonic and phasic stretch reflexes affecting the spinal column. excitability and changes in the intrinsic properties of motor neurons. Depending on the location of the lesion, spasticity can be focal, multifocal, segmental, multisegmental or generalized. Correct treatment is essential to reduce disability caused by involuntary muscle hyperactivity, optimize function, and prevent secondary complications. Spasticity, resulting from the neurological disorder of brain injury, describes a pathological picture whose central characteristic is involuntary and prolonged muscle contraction. Persistent resistance of spastic muscles to stretching is often followed by changes in the structural and mechanical strength of the muscles causing impaired bone and muscle development, shortening of the muscles and deformities of the affected limbs. This leads to functional limitations resulting in loss of motor function. Many parameters can influence the choice of treatment. A multidisciplinary approach represents the first-line management of spasticity. In our experience, a multidisciplinary approach combining treatment with focal injection of botulinum toxin type A (BTX-A), selective dorsal rhizotomy (SDR) and/or intrathecal baclofen pump (ITB) associated with an effective physical management program has a positive impact on functionality with improvements in motor function, quality of life and prevention of secondary deformities and pain. Our study supports the effectiveness of early treatment of spasticity through the use of botulinum toxin and/or ITB and SDR in achieving individualized goals of appropriate goals, relevant to the child's GMFCS (Gross Motor Function Classification Scale) level and factors personal and environmental.

**Biography (150-200 words):**

Flaminia Frascarelli is a childhood’s neurophysiatrists at the Neurorehabilitation department of Bambino Gesú Children Hospital.

She was born in Rome in 1976. She obtained her degree in Medicine and Surgery in 2001 from “La Sapienza University of Rome. Afterward, she had a residency in Physical Medicine and Rehabilitation in 2005 and a PhD in Neurorehabilitation Medicine in 2009.

During her residency program, she developed her experience in treatment of movement disorder in children with congenital or acquired brain injury, management of spasticity, gait analysis and Electromyography analysis. She focused her scientific works on the treatment of spasticity with botulinum toxin injection, gait analysis and upper and lower limb robotic rehabilitation in children with brain injury.

In 2006, she started working in the Neurorehabilitation Department of Bambino Gesú Children Hospital with a fellowship.

From 2009 to 2018, she was the physiatrist of the UDGEE (Unit for severe disabilities in developmental age) of Bambino Gesú children Hospital.

Since 2018 she is head of Functional Rheabilitation Unit of Neurorheabilitation Department and, with her multidisciplinary team, thake care the pharmacological and surgical treatment of spasticity with the aim of improving the quality of life of children affected by brain injury.