

ACUTE MEDULLA COMPRESSION

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ETIOLOGI

Traumatic injuries

Motor vehicle accidents

Football

Falls

Gymnastics

Violence

Diving into shallow water

Non-traumatic injuries/illnesses

Cancer

Osteoporosis

Multiple sclerosis

Inflammation of the spinal cord

Arthritis

FAKTOR RESIKO

- Laki-laki : kebanyakan pria beraktivitas di luar dan lebih aktif.
- Usia 16 sampai 30 : lebih aktif secara fisik dan mempunyai hobi yang cenderung beresiko tinggi.
- Usia lebih 65 tahun : punya gangguan lain → mempengaruhi tulang atau sendi, seperti artritis atau osteoporosis → cedera ringan dapat → kompresi medulla spinalis karena kerapuhan tulang vertebra pada kondisi osteoporosis.

KLASIFIKASI

FRANKEL CLASSIFICATION

A - Absence of motor or sensory function below the level of the lesion

B - Absence of motor function, but with some degree of sensitivity preserved below the level of the lesion

C - Some degree of motor function but without practical usefulness

D - Useful motor function below the level of the lesion

E - Normal sensory and motor function, although there may be some abnormality of reflexes

KLASIFIKASI

*ASIA/ISCoS Exam Chart (ASIA Impairment Scale)

Grade A	Complete lack of motor and sensory function below the level of injury (including the anal area)
Grade B	Some sensation below the level of the injury (including anal sensation)
Grade C	Some muscle movement is spared below the level of injury, but 50 percent of the muscles below the level of injury cannot move against gravity.
Grade D	Most (more than 50 percent) of the muscles that are spared below the level of injury are strong enough to move against gravity.
Grade E	All neurologic function has returned.

PEMERIKSAAN PENUNJANG

Laboratorium

- *Arterial blood gas* (ABG) : evaluasi kondisi oksigenasi & ventilasi yang adekuat.
- Level laktat : monitoring kondisi perfusi, mendeteksi adanya kondisi syok.
- Level hemoglobin / hematokrit : monitoring kondisi kehilangan darah karena cedera yang terjadi.
- Urinalisis : monitoring kondisi *genitourinary injury*.

Radiologi

- Foto polos : mengevaluasi tulang vertebra.
- *Computed tomography* (CT) *scanning* : untuk memvisualisasikan segmen kerangka aksial lebih detail disbanding foto polos.
- *Magnetic resonance imaging* (MRI) : melihat lesi *spinal cord*, ligamen, dan cedera jaringan lunak lain atau patologi

Differential diagnosis of acute and subacute non-traumatic paraplegic syndromes

1 Vascular disorders of the spinal cord

- 1.1 Ischemic disorders of the spinal cord
 - 1.1.1. Primary ischemias: atherosclerosis, vasculitis
 - 1.1.2. Secondary ischemias: vascular compression secondary to space occupying lesions, disorders of the aorta
 - 1.1.3. Decompression sickness
- 1.2. Spinal hemorrhages: epidural hematoma, subdural hematoma, subarachnoid hemorrhage, intraparenchymal hemorrhage (hematomyelia)
- 1.3. Spinal vascular malformations: dural arteriovenous fistula, perimedullary fistula, intramedullary arteriovenous angioma, cavernoma

2 Inflammatory disorders of the spinal cord

- 2.1 Without compression of the medulla
 - 2.1.1. Acute transverse myelitis: viral, bacterial, fungal, accompanying or following infection, after vaccination
 - 2.1.2. Myelitis in chronic inflammatory disorders of the central nervous system (e.g., multiple sclerosis, neuroborreliosis)
 - 2.1.3. Myelitis in systemic diseases (such as Behçet's disease)
- 2.2 With medullary compression
 - 2.2.1. Epidural abscess
 - 2.2.2. Subdural abscess
 - 2.2.3. Spondylodiscitis

3 Toxic or allergic disorders of the spinal cord

- 3.1 Subacute myelo-optico-neuropathy (SMON) caused by cloquimol
- 3.2 Late myelopathy after chemonucleolysis

4 Non-inflammatory spinal space occupying lesions:

- 4.1 Disc prolapse
- 4.2 Neoplasms

5 Non-spinal disorders:

- 5.1 Acute polyradiculitis Guillain Barré
- 5.2 Hyperkalemic or hypokalemic paralyzes
- 5.3 Parasagittal cortical syndrome (e.g., bilateral infarction in the area receiving its blood supply from the the anterior cerebral arteries)
- 5.4 Psychogenic paraplegic symptoms

Penatalaksanaan

○ Farmakologi methylprednisolon

- ✓ Dosis standar : 30mg/kgBB, bolus IV selama 15 menit → jeda 5 menit → dilanjutkan 5,4mg/kgBB/jam dengan infus selama 23 jam (jk terapi dimulai < 3 jam onset)
- ✓ Infus methylprednisolon dilanjutkan selama 4 – 8 jam jika terapi dimulai saat onset 3 – 8 jam.
- ✓ Kontraindikasi : luka terbuka → resiko infeksi, dan perkiraan efek obat lebih kecil drpd manfaat.
- ✓ Efek samping : hipersensitivitas, peningkatan resiko infeksi

Penatalaksanaan Komplikasi

- Neurogenic shock → jk cedera terjadi pd level Th.6 ke atas → terganggunya kontrol sistem saraf simpatis (Th1–L1) yg berfungsi mengontrol tonus vaskular. → bradikardi, hipotensi, akral hangat, output urin normal, central venous return menurun.
 - ✓ terapi profilaksis thromboembolism u/ pasien dgn defisit motorik yg berat → 3 bulan
 - ✓ Heparin dosis rendah dikombinasi dgn

Penatalaksanaan Komplikasi

- Deep Venous Thrombosis (DVT) dan Thromboembolism
 - ✓ terapi profilaksis thromboembolism u/ pasien dgn defisit motorik yg berat → 3 bulan
 - ✓ Heparin dosis rendah dikombinasi dgn *pneumatic compression stockings* atau *electrical stimulation* → profilaksis.
 - ✓ *Vena cava filters* → u/ pasien yg gagal dgn antikoagulan, atau pasien yg tdk memenuhi kriteria penggunaan antikoagulan.

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