ACUTE SPINAL CORD COMPRESSION
Supporting information

This guideline has been prepared with reference to the following:

NICE. Spinal metastases and metastatic spinal cord compression. 2023. London. NICE

https://www.nice.org.uk/guidance/ng234

Immediate treatment

Dexamethasone phosphate 4 mg IV 6 hrly is appropriate and will improve the outcome?
A 2021 review concluded that evidence regarding use of dexamethasone for MSCC is contentious, especially regarding dose regiments (Canseco, 2021). The results of this review found that while some data support benefits in the use of steroids on spinal cord pathology, extensive research suggests at best limited effects and an unresolvable risk/benefit problem.
A Cochrane review of 3 small trials (George, 2015) found that high doses of steroids did not differ from moderate-dose or no corticosteroids in enhancing ambulation (60% versus 55%; RR 1.08, 95% CI 0.81 to 1.45; 3 RCTs, 105 participants); survival over two years (11% versus 10%; RR 1.11, 95% CI 0.24 to 5.05; 1 RCT, 57 participants); pain reduction (78% versus 91%; RR 0.86, 95% CI 0.62 to 1.20; 1 RCT, 25 participants); or urinary continence (63% versus 53%; RR 1.18, 95% CI 0.66 to 2.13; 1 RCT, 34 participants; low quality evidence). Serious adverse effects were more frequent with high-dose corticosteroids (17% versus 0%; RR 8.02, 95% CI 1.03 to 62.37).
An evidence-based guideline for cord compression caused by malignancy (Loblaw, 1998) confirms the value of high-dose steroids but finds the evidence that moderate-dose (16 mg/d) steroids are equally effective to be inconclusive, despite the lower risk of side-effects.

Canseco JA, Karamian BA, Bowles DR et al. Updated Review: The Steroid Controversy for Management of Spinal Cord Injury. World Neurosurg. 2021;150:1-8

George R, Jeba J, Ramkumar G, et al. Interventions for the treatment of metastatic extradural spinal cord compression in adults. Cochrane Database Syst Rev. 2015
http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006716.pub3/full

Loblaw DA, Laperriere NJ. Emergency treatment of malignant extradural spinal cord compression: an evidence-based guideline. J Clin Oncol 1998;16:1613-24

Evidence Level: II

Time is of the essence, and immediate referral to a spinal specialist is essential?
Experimental evidence in monkeys (Locke, 1971) has shown that initially-elevated levels of lactic acid (indicating ischaemia) in traumatised spinal cords returns to normal 12-18 hours after injury. This has been extrapolated by later writers (Yashon, 1974; Feuer, 1976) to suggest that spinal cord injuries often do not become irreversible for several hours and that a “window of time” exists within which neurologic improvement may be possible (Rosenfeld, 1998). Evidence is conflicting, however, as to optimum timing of treatment. A review of 44 patients suffering spine and spinal cord injury (Wagner, 1982) showed that the severity of the original injury was the major determinant of neurological outcome. Differences in admission scores and percentage of recovery after 1 year were not significant between patients given early (up to 8 hours) and late (9 to 48 hours) decompression.

Feuer H. Management of acute spine and spinal cord injuries: old and new concepts. Arch Surg 1976;111:638-45

Locke GE, Yashon D, Feldman RA, et al. Ischemia in primate spinal cord injury. J Neurosurg 1971;34:614-7

Rosenfeld JF, Vaccaro AR, Albert TJ, et al. The benefits of early decompression in spinal cord injury. Am J Orthop 1998;27:23-8

Wagner FC, Chehrazi B. Early decompression and neurological outcome in acute cervical spinal cord injuries. J Neurosurg 1982;56:699-705

Yashon D, White RJ. Injuries of the vertebral column and spinal cord. In: Feiring EH (ed). Brock’s Injuries of the brain and spinal cord and their coverings. 5th ed. New York: Springer, 1974. p725

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Evidence Level: V

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