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LRI Emergency Department

Cauda equina syndrome (CES) rule in/out

Version 1

Use in all adult patients presenting with acute or deteriorating back or sciatic pain and any others in whom CES is a concern

DO NOT use if malignancy is known or suspected or vital signs significantly abnormal

Disclaimer:
This is a clinical template; clinicians should always use judgment when managing individual patients

Approved by ED guidelines committee on 14Dec21 . Trust Ref: C53/2021
Review due Dec24

Patient details

Full name

DoB

Unit number

(use sticker if available)

① CES red flags present?

☐ **Yes**, at least one of the below

- Sense of numbness, pins & needles or tingling around the anus or genitals ☐
- Difficulty initiating micturition ☐
- impaired sensation of urinary flow ☐
- Urinary retention (especially if painless) ☐
- Urinary incontinence ☐
  (**NB**: ignore stress/urge incontinence)
- Bilateral radicular (below knee) leg pain ☐
- Weakness or foot drop in both legs ☐
- Loss of sensation of rectal fullness ☐
- Faecal incontinence ☐
- Erectile dysfunction (achievement of erection or ability to ejaculate) ☐

☐ **NO**, none of the above

For interest:
CES is more likely if

- Age < 50 years
- Obesity
- Previous CES
- Known developmentally narrow spinal canal
- Radicular pain if
  - Progressing from uni- to bilateral
  - Sudden bilateral
  - Alternating between legs

CESI =
incomplete CES; better recovery chance with rapid intervention

CESR =
CES with retention; poor recovery chance even with urgent care

CES red flags (see box 1)? — **N** ☐ → CES excluded / Safety-net for CES — **Y** ☐ ↓

- Carefully document onset date (and time if within last 48h) of each red flag
- Obtain IV access and send FBC, U&E, LFT and CRP
- Provide good analgesia (see boxes 2 and 3)
- Perform neurological leg and anorectal exam; record findings in boxes 4 and 7
- Ask patient to void and arrange bladder scan within 5min; record PVR in box 5

NB: Tick if unable to obtain PVR because ☐ catheter in situ or ☐ in retention

Bilateral radicular leg pain only, no other CES symptoms **AND** normal neurology **AND** PVR ≤200mL (see box 5)? — **Y** ☐ → **CES excluded** — **N** ☐ ↓

Is it now **08:00 – 20:00**? — **Y** ☐ → MRI L-spine * (Priority on ongoing list) — **N** ☐ ↓

Suggests **CESR**; MRI can wait 'til morning

In retention or faecally incontinent? — **Y** ☐ → 07:30 MRI L-spine * (Emergency morning slot) — **N** ☐ ↓

CES less likely; MRI can wait 'til morning

PVR >200mL or anorectal exam abnormal (boxes 4 and 5)? — **N** ☐ → 07:30 MRI L-spine * — **Y** ☐ ↓

High risk of **CESI**; MRI cannot wait

On-call staff will be called in

07:30 MRI L-spine * | Out-of-hours MRI L-spine * | MRI L-spine *

* MRI requested by area lead, EPIC or consultant only

Between **20:00** and **08:00**, MRI request should state if **CESI** suspected and scan urgent or delay 'til **07:30** acceptable

MRI questions:
- Cauda equina compression?
- Other structural cause of pain?
- Non-compressive pathology present?

Admit to EDU on '[CES investigation pathway]' while MRI awaited
(**NB**: Keep in ED instead if abnormal bloods or vital signs, or other reasons for admission)

Safety-net for CES (see box 6); manage as appropriate

Seen by

Print name	Signature	Role	Date

② Analgesia bundle

***NB**: Account for analgesia taken prior to arrival before prescribing*

- Paracetamol 1g PO
- Dihydrocodeine 30mg PO if not drowsy; codeine instead if >65
- Diclofenac 100mg PR if safe (see box 3); if aged >65 prescribe ibuprofen 400mg instead
- If pain score > 6/10
  - Morphine IV titrated **OR**
  - Oramorph 10mg (5mg if >65)
- **DO NOT** prescribe benzodiazepines

③ NSAID safety issues?

☐ **Yes**, at least one of the below

- Patient allergic to any NSAID ☐
- Exacerbation of asthma after use of any NSAID in the past ☐
- Known current peptic ulcer ☐
- Known or obvious heart failure ☐
- Known inflammatory bowel disease ☐
- Currently treated with aspirin ☐
- Known abnormal renal function ☐
- Current illness with risk of AKI ☐

☐ **NO**, none of the above

④ Anorectal exam abnormal?

If patient with capacity refuses, tick here ☐

Chaperone

Print name | Role

☐ **Yes**, as at least one of the below

- Voluntary anal contraction (VAC) absent ☐
- Cough anal reflex absent ☐

☐ **NO**, as neither of the above

⑤ Post-void residual (PVR)

NB: Complete bladder scan within 5min of voiding

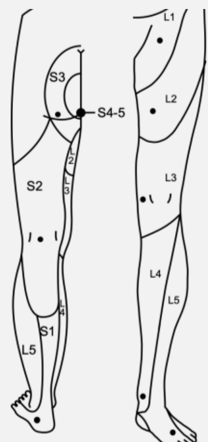
mL

⑥ CES safety netting

- ☐ Explain that imaging is not required, and why inappropriate imaging may actually be harmful
- ☐ Hand out PIL 822 '[A guide for people with back pain]'
- ☐ Prescribe appropriate TTO analgesia

NB: Tick here if not needed ☐

⑦ Lower limb neurological examination



motor and sensory exam findings

	Key muscles		Right M	Right LT	Right PP	Left LT	Left PP	Left M
L1								
L2								
L3	Knee extensors							
L4	Ankle dorsiflexors							
L5	Long toe extensors							
S1	Ankle plantar flexors							
S2								
S3								
S4-5								

deep tendon reflexes

	R	L
Patellar		
Ankle		

Sensation grading

LT = light touch
PP = pin prick

0 = absent
1 = impaired
2 = normal

NT = Not testable
0*, 1* = Non-SCI condition present

Reflex response grading

0 = no response; abnormal
1+ = slight but definite response; may or may not be normal
2+ = brisk response; normal
3+ = very brisk response; may or may not be normal
4+ = tap elicits a repeating reflex (clonus); abnormal

Motor power (M) grading

0 = Total paralysis
1 = Palpable or visible contraction only
2 = Active movement, gravity eliminated
3 = Active movement, against gravity
4 = Active movement, against some resistance
5 = Active movement, against full resistance

NT = Not testable

0*, 1*, 2*, 3*, 4* = Non-SCI condition present