Spine Unit 2.0
Management van lumboischialgie op spoedgevallen

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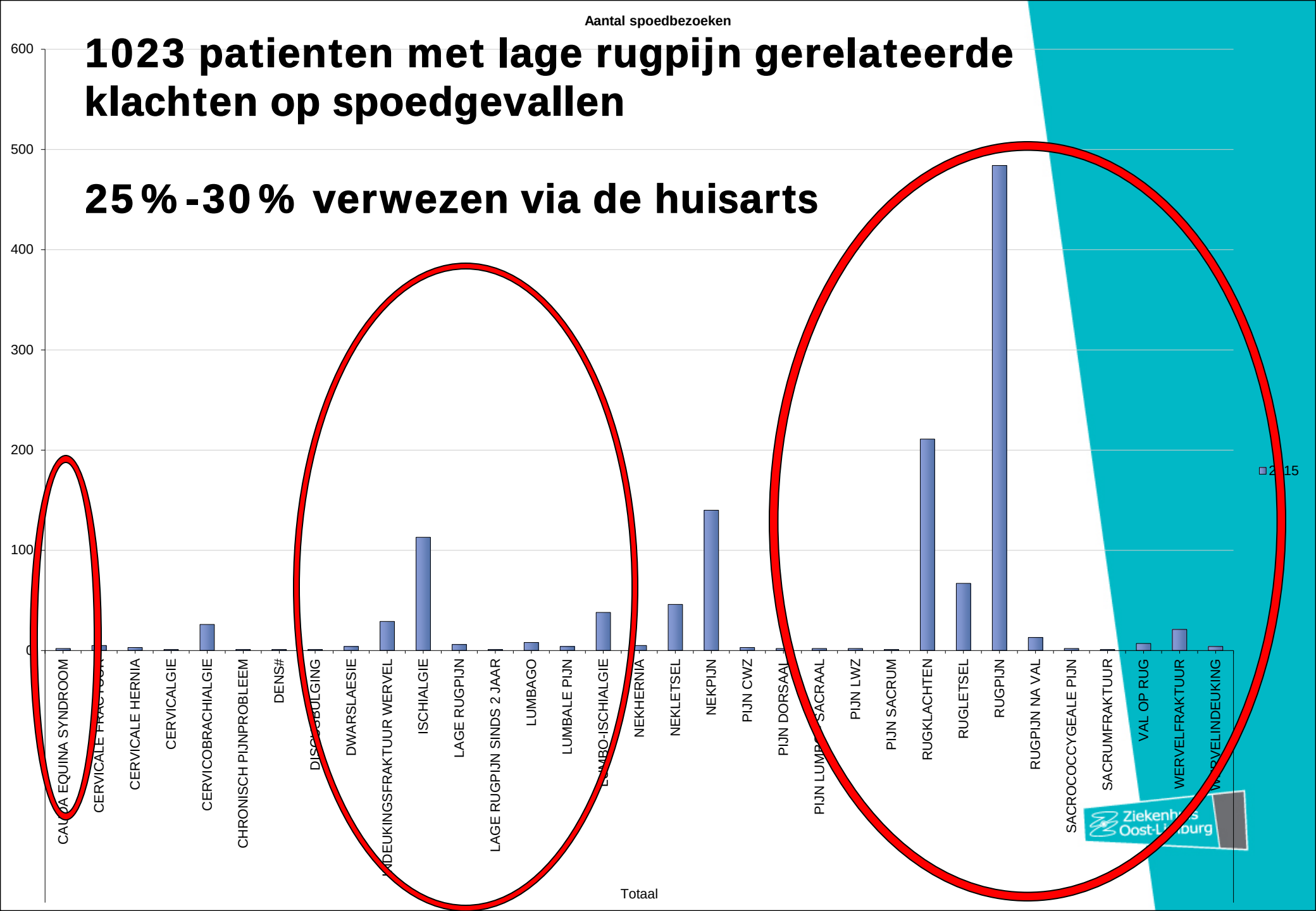
Ziekenhuis Oost-Limburg

1023 patienten met lage rugpijn gerelateerde klachten op spoedgevallen

25%-30% verwezen via de huisarts



Doel op spoedgevallen

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Therapeutics and Clinical Risk Management

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ORIGINAL RESEARCH

Low-back pain at the emergency department: still not being managed?

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Background: Low-back pain (LBP) affects about 40% of people at some point in their lives. In the presence of "red flags", further tests must be done to rule out underlying problems; however, biomedical imaging is currently overused. LBP involves large in-hospital and out-of-hospital economic costs, and it is also the most common musculoskeletal disorder seen in emergency departments (EDs).

Patients and methods: This retrospective observational study enrolled 1,298 patients admitted to the ED, including all *International Classification of Diseases* 10 diagnosis codes for sciatica, lumbosciatica, and lumbago. We collected patients' demographic data, medical history, lab workup and imaging performed at the ED, drugs administered at the ED, ED length of stay (LOS), numeric rating scale pain score, admission to ward, and ward LOS data. Thereafter, we performed a cost analysis.

Results: Mean numeric rating scale scores were higher than 7/10. Home medication consisted of no drug consumption in up to 90% of patients. Oxycodone–naloxone was the strong opioid most frequently prescribed for the home. Once at the ED, nonsteroidal anti-inflammatory drugs and opiates were administered to up to 72% and 42% of patients, respectively. Imaging was performed in up to 56% of patients. Mean ED LOS was 4 hours, 14 minutes. A total of 43 patients were admitted to a ward. The expense for each non-ward-admitted patient was approximately €200 in the ED, while the mean expense for ward-admitted patients was €9,500, with a mean LOS of 15 days.

Conclusion: There is not yet a defined therapeutic care process for the patient with LBP with clear criteria for an ED visit. It is to this end that we need a clinical pathway for the prehospital management of LBP syndrome and consequently for an in-hospital time-saving therapeutic approach to the patient.

Keywords: low-back pain, health policies, emergency department, cost analysis

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Lessons learned

1. Potentieel grote socio-economische impact.
2. Nood aan adequate diagnostiek en therapie, geimplementeerd in een echelon overschrijdend zorgproces.
3. Overconsumptie beperkend.

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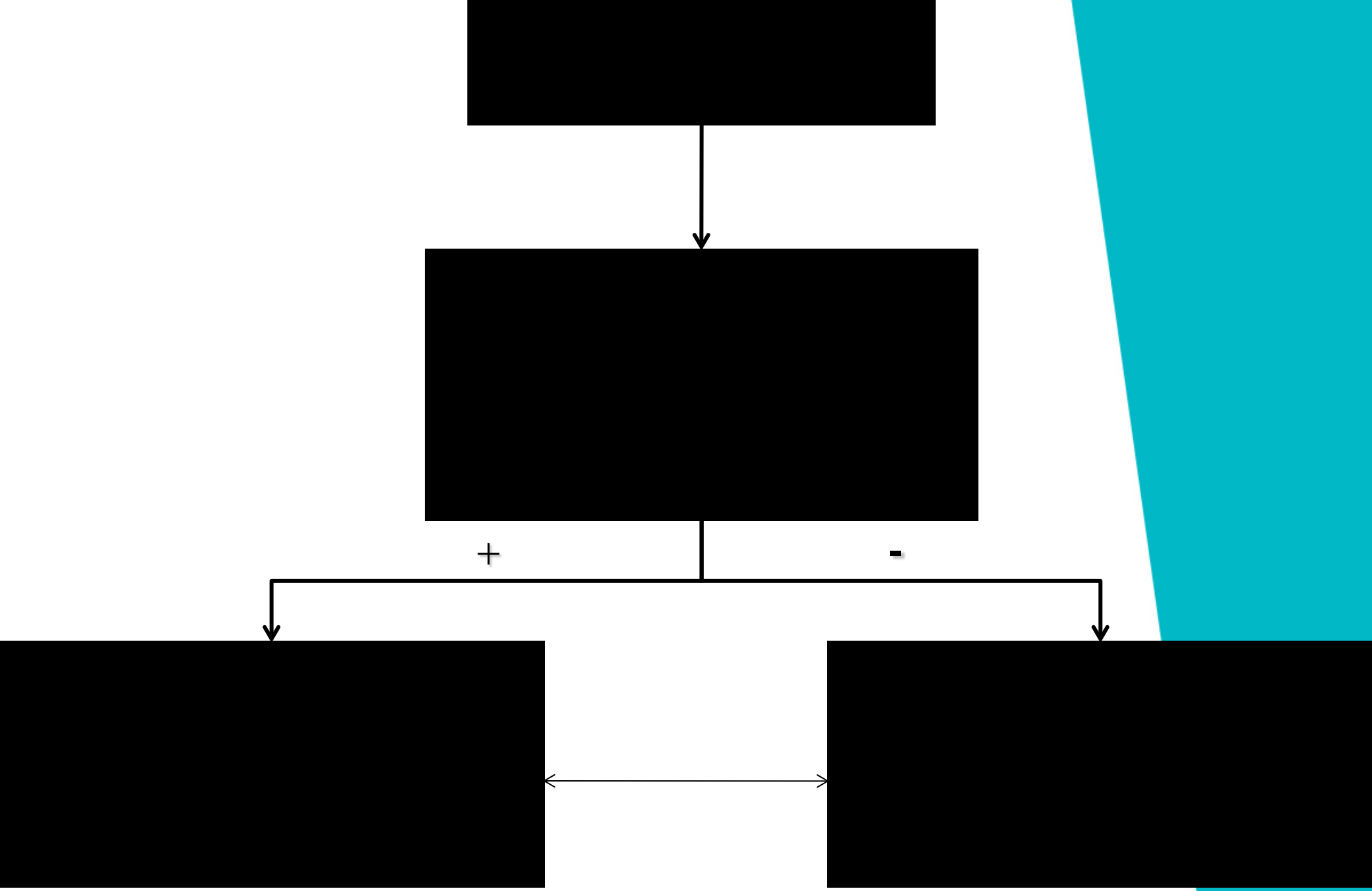

Lumboischialgie

Dafalgan Odis 1g + Tradonal odis 50mg
Na 30min evtl + Tradonal odis 50mg

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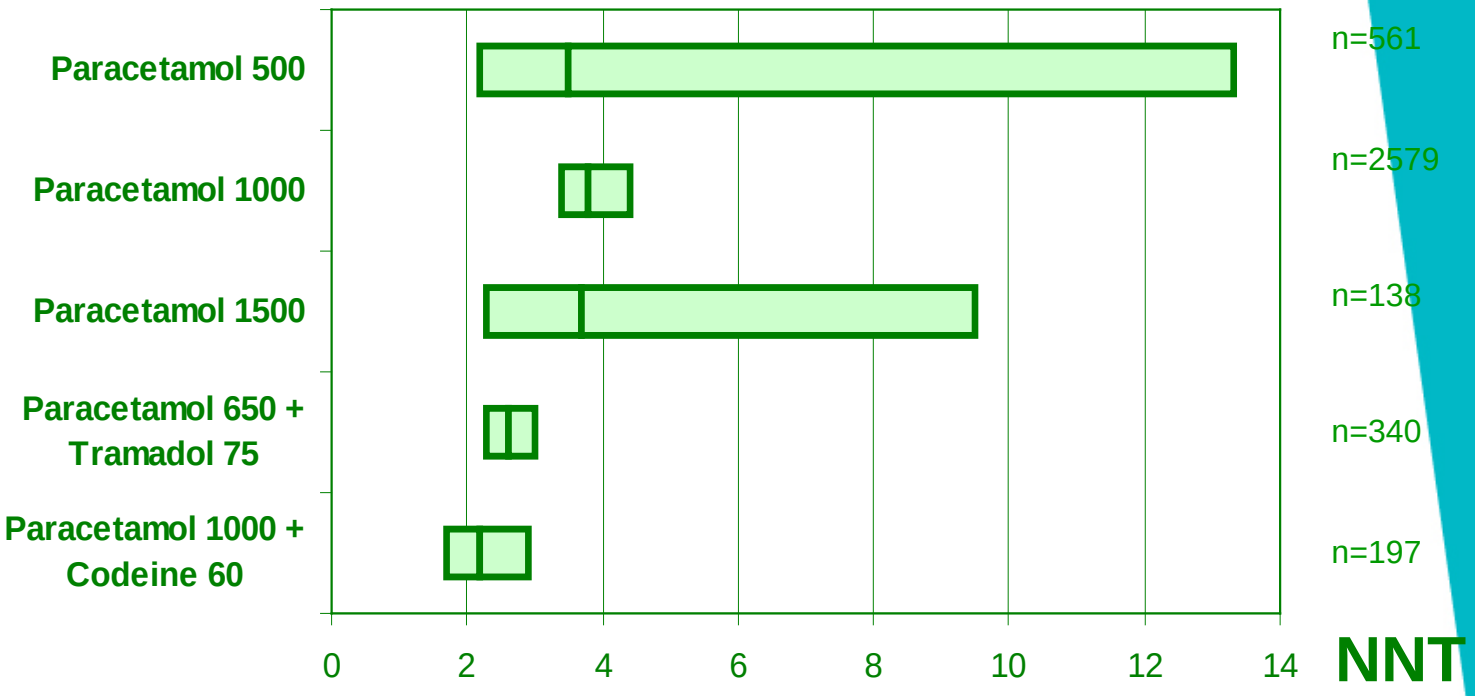
Samenvatting van de wetenschappelijke bewijzen voor behandeling van "gewone" chronische lage rugpijn

Niet-invasieve behandelingen	Quality of evidence
Informatie aan de patiënt	High
Bedrust	No evidence (« high against » for acute LBP)
Lumbale steun	Very low
Massage	Low
Warm-Koud	No evidence
Elektrotherapie, thermotherapie	Low
Ultrasonen, laser	Low
TENS	Low
Balneotherapie	Moderate
Hydrotherapie	Low
Tractie	High against
EMG biofeedback	High against
Oefeningen en conditietraining	High
Rugschool (behalve arbeidsgeneeskunde)	Low
Korte patiënteneducatie	Moderate
Cognitieve gedragstherapie	Moderate
Oefeningen en conditietraining	High
Multidisciplinair programma – (patiënteneducatie, oefeningen, relaxatie, gedragsinterventies…)	High
Manipulaties	Moderate, short term effect only

Geneesmiddelen	Quality of evidence
Paracetamol	No evidence
Ontstekingsremmers	Low
Acetylsalicylzuur	No evidence
Codeïne/tramadol	Moderate
Sterke opioïden	Very low
Benzodiazepines	Low
Spierverslappers	Very low
Antidepressiva	Moderate but conflicting
Gabapentine	Low
Fytotherapie	Low
Topische NSAIDs	No evidence

Invasieve behandelingen	Quality of evidence
Gewone epidurale injecties zonder ischias	No evidence
Gewone epidurale injecties met ischias	Very low
Transforaminale epidurale injecties in geval van ischias	Low
Andere injecties (facetten, trigger points, sacro-iliacaal…)	Very low

EBM medicamenteuze therapie acute pijn: Paracetamol



Doeltreffend

Alleen: relatief vlakke dosis-respons curve

In combinatie: verbeterd effect

The Oxford Pain Internet Site
http://www.jr2.ox.ac.uk/bandolier/booth/painpag/Acutrev/Analgesics/AP004.html

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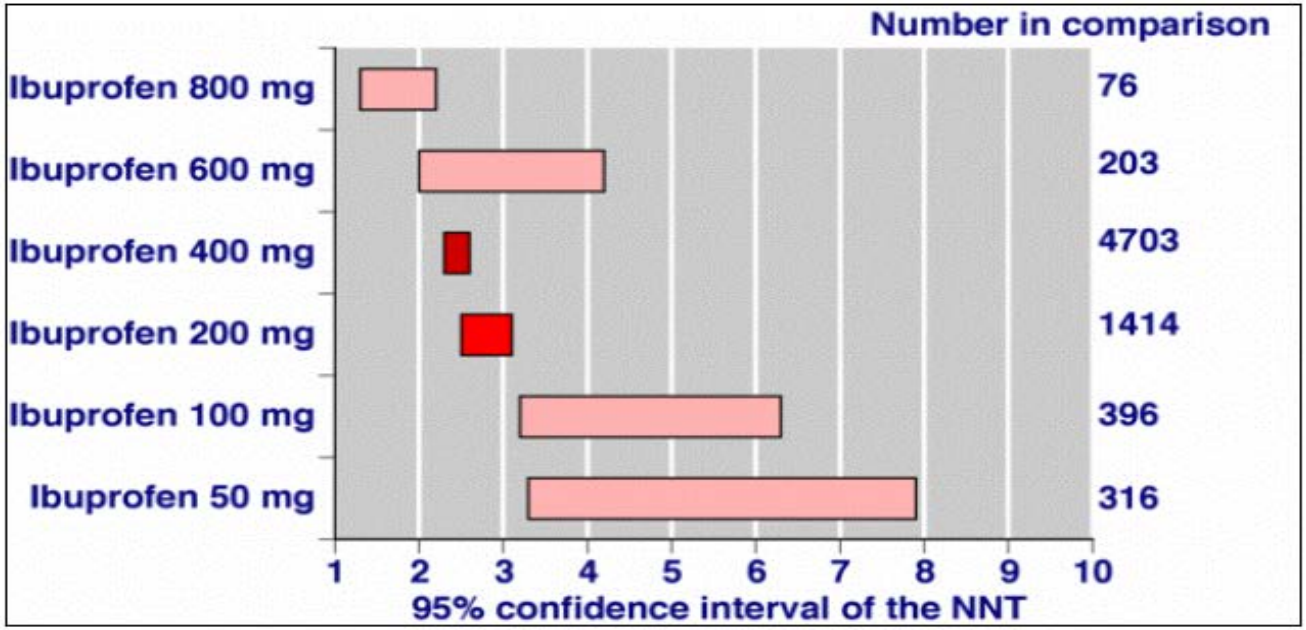
EBM medicamenteuze therapie acute pijn: NSAID



The Oxford Pain Internet Site http://www.jr2.ox.ac.uk/bandolier/booth/painpag/wisdom/493HJM.html

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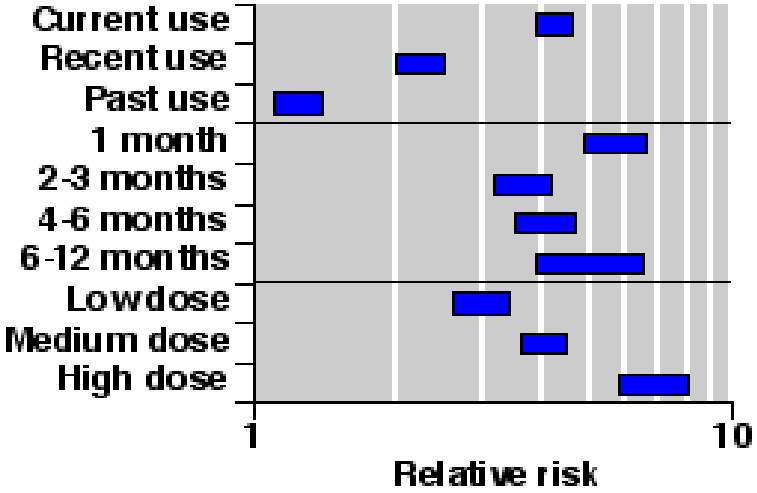
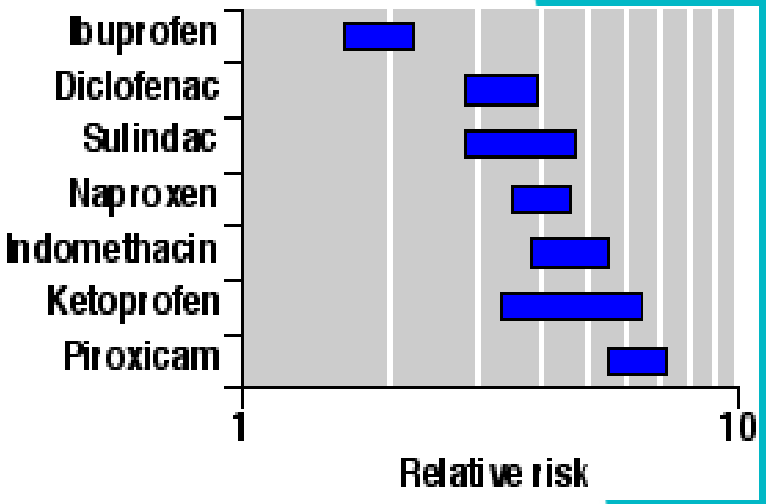
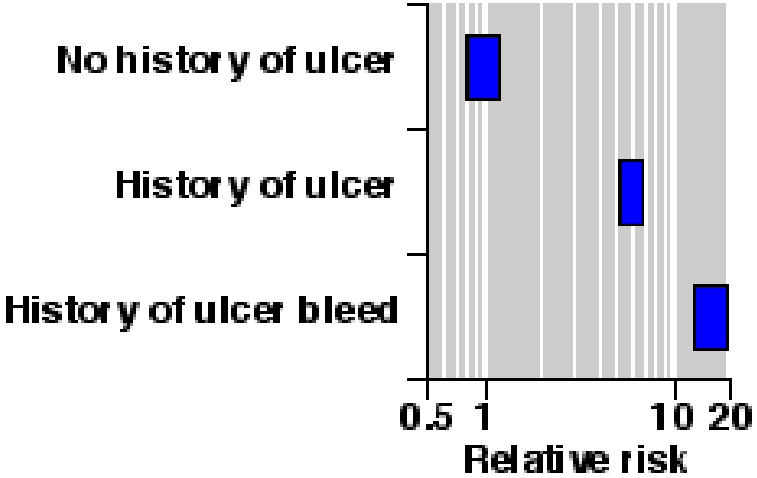
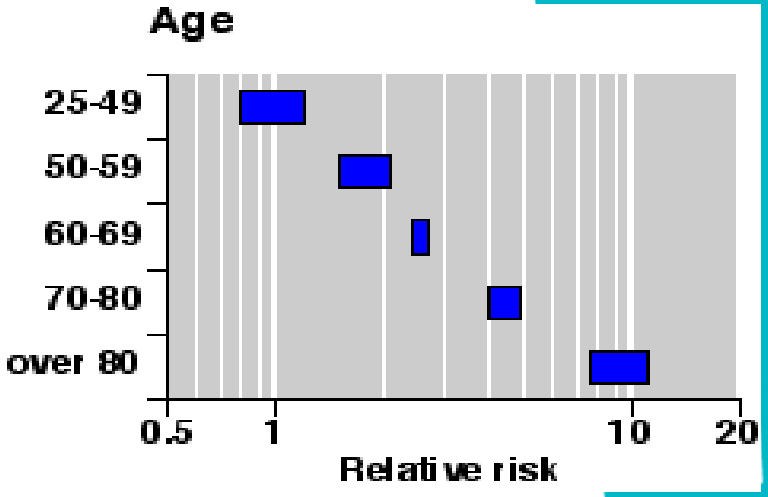
EBM medicamenteuze therapie acute pijn: NSAID









EBM medicamenteuze therapie: neuropathische pijn

Antidepressiva

- TCA: Amitriptyline, Imipramine, Desipramine
- SNRI: Duloxetine

Antiepileptica

- Gabapentine, Pregabaline

Buprenorphine: ORL 1 receptor

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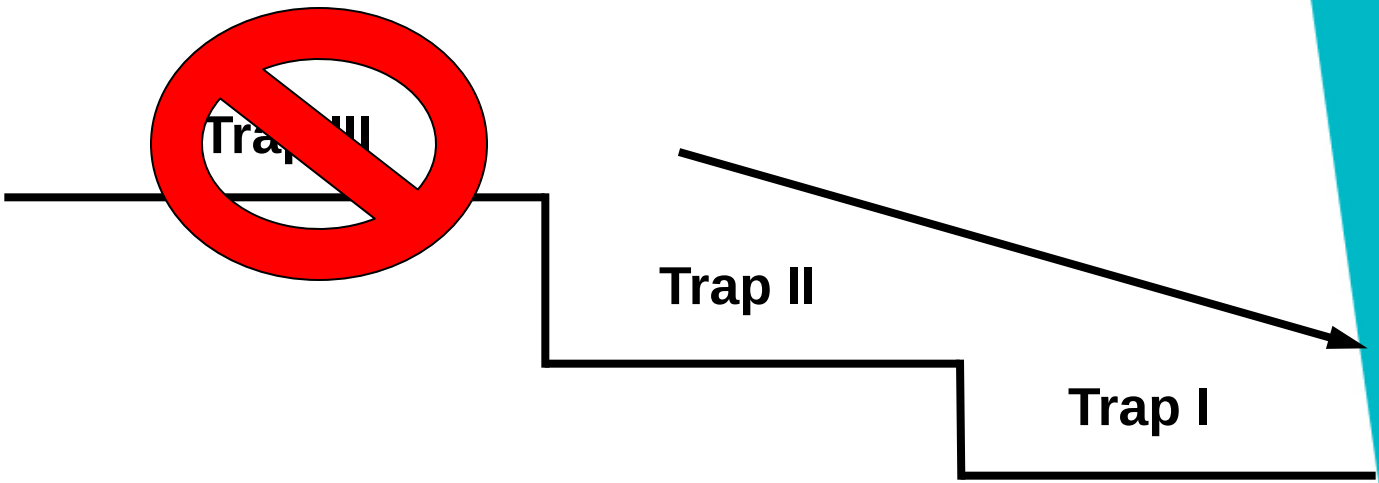
Behandel acute pijn adequaat om chronische pijn te voorkomen



Analgeticum kiezen in functie van de pijnintensiteit

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50, No. 3, pp. 376–384, 2016

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EXTENT AND IMPA ATIONAL LOW
B

Sharon S CH

Reprint Address: Glenn S. P Hopkinton, MA 01748

☐ **Abstract—Background:** Initial management of acute occupational low back pain (AOLBP) commonly occurs in the emergency department (ED), where opioid prescribing can vary from the clinical guidelines that recommend limited use. **Objective:** The objective of this study was to explore how opioids are prescribed in the ED and the impact on work disability and other outcomes in AOLBP. **Methods:** A retrospective cohort study was conducted. All acute compensable lost-time LBP cases seen initially in the ED with a date of injury from January 1, 2009 to December 31, 2011 were identified within a nationally representative Workers' Compensation dataset. Multivariate models estimated the effect of early opioids (received within 2 days of ED visit) on disability duration, long-term opioid use, total medical costs, and subsequent surgeries. **Results:** Of the cohort (N = 2887), 12% received early opioids; controlling for severity, this was significantly associated with long-term opioid use (adjusted risk ratio = 1.29; 95% confidence interval 1.05–1.58) and increased total medical costs for those in the highest opioid dosage quartile, but not associated with disability duration or subsequent low back surgery. **Conclusions:** Early opioid prescribing in the ED for uncomplicated AOLBP increased long-term opioid use and medical costs, and should be discouraged, as opioid use for low back pain has been associated with a variety of adverse outcomes. However, ED providers may be becoming more compliant with current LBP treatment guidelines. © 2016 Elsevier Inc.

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- Beperk het gebruik van NSAID in tijd en dosis.
- Combinatie van producten met verschillende werkingsmechanismen werkt additief (paracetamol en NSAID) en soms synergistisch (paracetamol en tramadol).

- Gebruik steeds retard preparaten:
  - Minder risico op substance abuse
  - Verhoogde compleantie

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EBM medicamenteuze therapie: opioïden

Cytochroom P450 gen polymorfisme

- CYP2D6: Tramadol, Codeïne, Oxycodone, Alfentanil
- CYP3A4: Methadone, Fentanyl
- CYP2C9: NSAID

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Lumboischialgie

Dafalgan Odis 1g + Tradonal odis 50mg
Na 30min evtl + Tradonal odis 50mg

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Lumboischialgie

Dafalgan Odis 1g + Tradonal odis 50mg
Na 30min evtl + Tradonal odis 50mg

- RED FLAGS
- CAUDA EQUINA SYNDROOM
- SENSORIMOTORISCHE UITVAL

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Red Flags:

- Hoog energetisch trauma
- Thoracale pijn
- Osteoporose
- Systemische corticoiden

} Wervel fracturen

- 20j<
- Persisterende ernstige restrictie lumbale flexie
- Nachtelijke pijn

} Inflammatoire-systeem aandoeningen

- Continue, progressieve, niet mechanische pijn
- Voorgeschiedenis van kanker
- Gewichtsverlies
- >50j

} Maligniteit: primair-meta's

- Systemische steroiden
- Drug abuses, HIV, immunosupressiva
- Algemene malaise, koorts

} Discitis-Osteomyelitis

- Sensori/motorische uitval

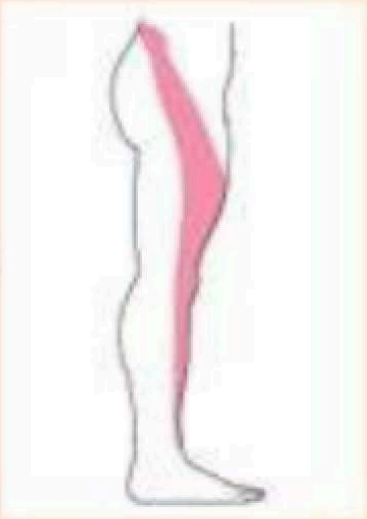
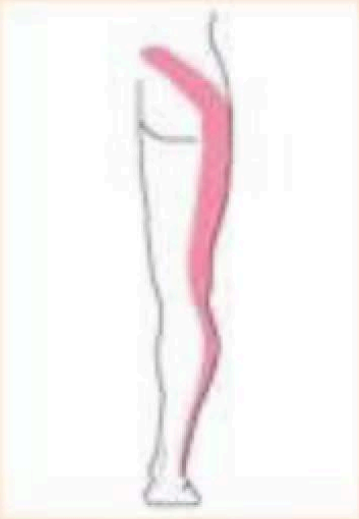
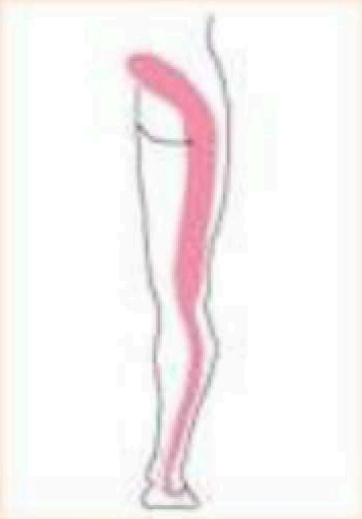
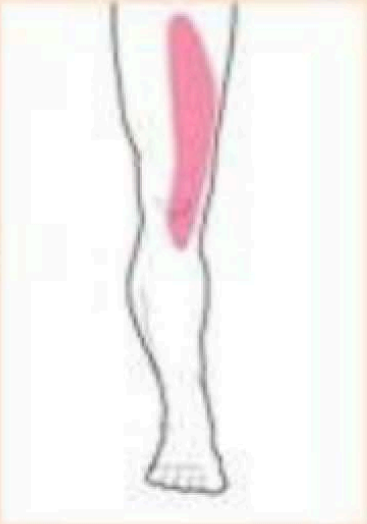
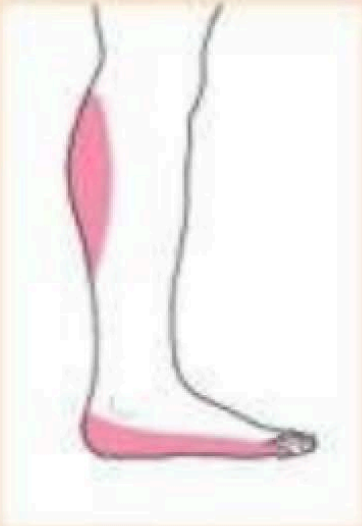
} Cauda Equina Syndroom

Koes criteria: Radiculaire pijn

- Unilaterale ischias>Lumbalgie
- Uitstraling tot in de voet/tenen
- Voosheid en paresthesieën
- Radiculair neurologisch deficit

Cauda Equina Syndroom

- Zadelanesthesie
- Urineretentie (incontinentie)
- Verlies anale sfinctertonus
- Hyperreflexie, Babinski +
- Motorisch deficit op meerdere niveau’s

Nerve Root	L4	L5	S1
Pain			
Numbness			
Motor weakness	Extension of quadriceps	Dorsiflexion of great toe and foot	Plantar flexion of great toe and foot
Screening exam	Squat and rise	Heel walking	Walking on toes
Reflexes	Knee jerk diminished	None reliable	Ankle jerk diminished

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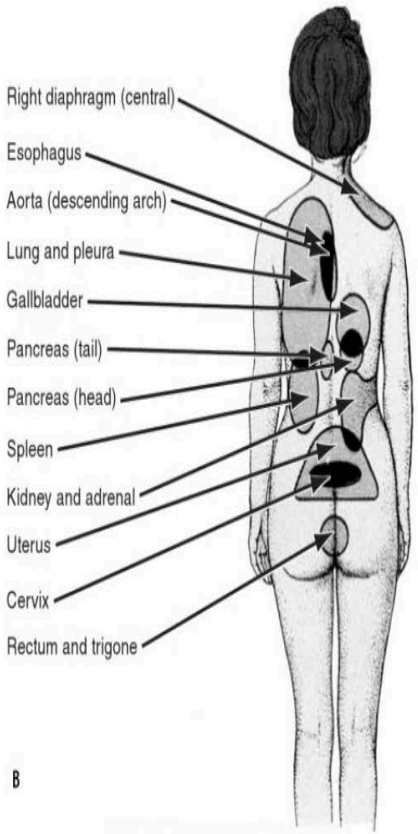
Extra-spinale oorzaken van rugpijn

Thoracaal:

- Aortadissectie
- Atypische angorklachten

Lumbaal:

- Rupturerend AAA
- Nefrolithiasis
- Retroperitoneale tumoren
- Pancreatitis



Keep in mind:

- A careful general history and physical examination in backache is of the utmost importance.
- Associated symptoms have differential value.
- Backache may occur in any acute systemic infection.
- Myocardial infarction can also cause back pain.
- Lumbar spasm may accompany the severe pain of certain retroperitoneal diseases (renal tumor, abscess, stone, lymphoma, etc.).
- Radicular pain may occur with visceral lesions, as in sciatic radiation due to hypernephroma.
- Just as visceral disease may suggest spinal pathology, so may the radiation of spinal lesions suggest a visceral origin of pain.
- Do not overlook the possibility of rectal and bladder lesions in persistent coccygodynia.
- Check the breasts of all females with back pain. Pain due to metastasis is not infrequently the first sign of a breast lesion.

Source: Reprinted by permission of QUADRANT HEALTHCOM Inc. from "Extraspinal Causes of Back Pain," *Hospital Medicine*, Vol. 18, No. 12, p. 95, Copyright 1982 by QUADRANT HEALTHCOM Inc.

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+

Neurochirurgie:

- Onhoudbare pijn/verwezen door huisarts na acute periode
- Cauda equina: MRI
- Sensorimotorische uitval: MRI
- Indeukingsfractuur: CT
- Discitis/osteomyelitis: MRI, culturen, labo
- Spinale tumor: SPECT-CT/MRI
- Inflammatoire/systeem aandoeningen: SPECT-CT, labo
- Postoperatief probleem

-

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-

Follow-up 1ste lijn:

- Onverwikkelde ischialgie
- Onverwikkelde lumbalgie

- GEEN MEDISCHE BEELDVORMING
- INFORMERING EN GERUSTSTELLING PATIËNT
- ALARMSYMPTOMEN
- ANALGESIE PER OS
- GEEN ATTEST LANGDURIGE WERKONGESCHIKTHEID

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Samenvatting van de wetenschappelijke bewijzen voor diagnose van "gewone" chronische lage rugpijn

	Quality of evidence
Anamnese	
"Red flags" (cf. definitie in de tekst)	Very low
"Yellow flags" * (buiten de context van arbeidsgeneeskunde)	Moderate
Tekens van Waddell	Moderate against
Functionele evaluatie	Very low
Pijnevaluatie	Very low
Klinisch onderzoek	
Orthopedisch onderzoek	Very low
Neurologisch onderzoek	Very low
Lasègue	No evidence
Palpatie- en premanipulatietesten	Moderate against
Klinische biologie	Very low
Beeldvorming	
Radiografie	Moderate against
Magnetische resonantie **	Moderate against
CT Scan	Very low
Discografie	Moderate against
Elektromyografie	
Klassieke EMG	Very low
Oppervlakkige EMG	Very low
Invasieve diagnostische technieken	
Blocks van het facetgewricht	Moderate but conflicting
Selectieve blocks van zenuwwortels	Very low
Meting van lichamelijke conditie	
Cardiorespiratoire uithouding	Very low
Spierkracht van de romp	Very low

**Psychosociale risicofactoren waardoor hoger risico op chroniciteit of langere arbeidsongeschiktheid*
***Moderate quality of evidence voor het gebruik van MRI bij CLBP met wortelsymptomen of sterk vermoeden van discitis of tumor.*

Cochrane Library

Cochrane Database of Systematic Reviews

Red flags to screen for vertebral fracture in patients presenting with low-back pain (Review)

Williams CM, Henschke N, Maher CG, van Tulder MW, Koes BW, Macaskill P, Irwig L

Cochrane Library

Cochrane Database of Systematic Reviews

Main results

Eight studies set in primary (four), secondary (one) and tertiary care (accident and emergency = three) were included in the review. Overall, the risk of bias of studies was moderate with high risk of selection and verification bias the predominant flaws. Reporting of index and reference tests was poor. The prevalence of vertebral fracture in accident and emergency settings ranged from 6.5% to 11% and in primary care from 0.7% to 4.5%. There were 29 groups of index tests investigated however, only two featured in more than two studies. Descriptive analyses revealed that three red flags in primary care were potentially useful with meaningful positive likelihood ratios (LR+) but mostly imprecise estimates (significant trauma, older age, corticosteroid use; LR+ point estimate ranging 3.42 to 12.85, 3.69 to 9.39, 3.97 to 48.50 respectively). One red flag in tertiary care appeared informative (contusion/abrasion; LR+ 31.09, 95% CI 18.25 to 52.96). The results of combined tests appeared more informative than individual red flags with LR+ estimates generally greater in magnitude and precision.

Authors' conclusions

The available evidence does not support the use of many red flags to specifically screen for vertebral fracture in patients presenting for LBP. Based on evidence from single studies, few individual red flags appear informative as most have poor diagnostic accuracy as indicated by imprecise estimates of likelihood ratios. When combinations of red flags were used the performance appeared to improve. From the limited evidence, the findings give rise to a weak recommendation that a combination of a small subset of red flags may be useful to screen for vertebral fracture. It should also be noted that many red flags have high false positive rates; and if acted upon uncritically there would be consequences for the cost of management and outcomes of patients with LBP. Further research should focus on appropriate sets of red flags and adequate reporting of both index and reference tests.

Cochrane Library

Cochrane Database of Systematic Reviews

Red flags to screen for malignancy in patients with low-back pain (Review)

Henschke N, Maher CG, Ostelo RWJG, de Vet HCW, Macaskill P, Irwig L

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Cochrane Library

Cochrane Database of Systematic Reviews

Main results

We included eight cohort studies of which six were performed in primary care (total number of patients; n = 6622), one study was from an accident and emergency setting (n = 482), and one study was from a secondary care setting (n = 257). In the six primary care studies, the prevalence of spinal malignancy ranged from 0% to 0.66%. Overall, data from 20 index tests were extracted and presented, however only seven of these were evaluated by more than one study. Because of the limited number of studies and clinical heterogeneity, statistical pooling of diagnostic accuracy data was not performed.

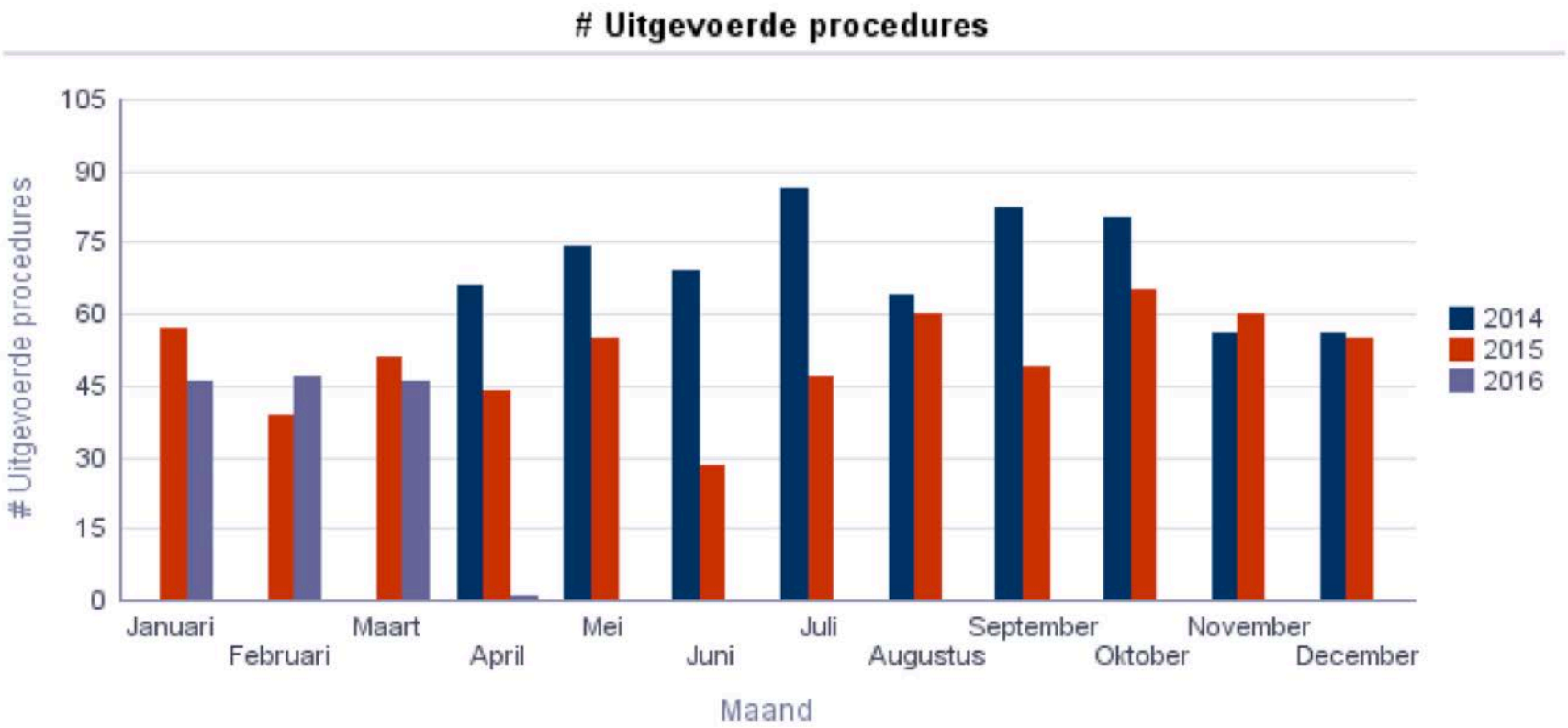
There was some evidence from individual studies that having a previous history of cancer meaningfully increases the probability of malignancy. Most "red flags" such as insidious onset, age > 50, and failure to improve after one month have high false positive rates.

All of the tests were evaluated in isolation and no study presented data on a combination of positive tests to identify spinal malignancy.

Authors' conclusions

For most "red flags," there is insufficient evidence to provide recommendations regarding their diagnostic accuracy or usefulness for detecting spinal malignancy. The available evidence indicates that in patients with LBP, an indication of spinal malignancy should not be based on the results of one single "red flag" question. Further research to evaluate the performance of different combinations of tests is recommended.

Evolutie van het CT's Lumbale Wervelzuil sedert invoering van een ALBP protocol



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