Acute Low Back Pain (ALBP) due to Malignancy

Algorithm:

Applications of red flags to clinical decision making		
	Post-test probability (%)	
	Pre-test probability 1%	Pre-test probability 5%
Clinical feature		
No relief with bed rest	1.7	8.3
Age ≥ 50	2.2	10.4
Duration of pain > 1 month	2.5	12.1
Not improved after 1 month	2.9	13.7
Previous history of cancer	19.2	55.7
Laboratory test result		
Anaemia	3.8	17.1
WBC* ≥ 12,000	3.9	17.9
Haematocrit < 30%	15.4	49.1
ESR† ≥ 20 mm/h	2.3	10.9
ESR ≥ 50 mm/h	15.3	48.8
ESR ≥ 100 mm/h	35.7	74.7
Positive clinician judgement	10.8	39.1
Age ≥ 50 or unexpected weight loss or previous history of cancer or failure to improve over 1 month	2.3	11.3

Changes in the probability of cancer with a positive response to each red flag. Analysis is conducted for pre-test probabilities of 1 and 5%
*WBC white blood cell count, †ESR erythrocyte sedimentation rate

Inclusions:

- Adults (>18 years)
- Consulted health practitioner about acute low back pain

Exclusions:

- None

Summary Statement:

A Cochrane Diagnostic Test Accuracy review by Henschke et al in 2013 evaluated clinical risk factors associated with the presence of malignancy in 8 studies enrolling a total of 7,361 patients. The review found that overall the reporting of methodology of the eight studies included in the review was poor and the quality of the included studies low, based on evaluation of study methodology with the QUADAS tool which is used for quality appraisal of studies of diagnostic accuracy. However, the review identified some risk factors as having high positive likelihood ratios (but poor sensitivity) for the identification of patients who had a malignant cause for their ALBP (for full table refer back to the Acute Low Back Pain Module). The data shows that cancer is rare in patients presenting to primary care with low back pain and that most red flags are uninformative because they do not meaningfully increase the probability of cancer when present. **The exception is a previous history of cancer.** Unfortunately it was not possible to determine whether a combination of the risk factors would have identified these patients with greater sensitivity because this was not evaluated within the studies. **Therefore, while the presence of any one of these risk factors should certainly alert the clinician to the increased risk of malignancy as the cause for an ALBP presentation, and thus the need for further investigations (including imaging), the absence of all of these risk factors is not necessarily good evidence that malignancy is not the cause of the ALBP based on this systematic review**. A prospective cohort study applying all of these risk factors to a single, large population of adults with ALBP, and determining their association with a "gold standard" test for spinal malignancy like MRI would need to be performed to increase our confidence in the predictive value of the risk factors. In addition, testing of a CDR so derived on different populations (general practice, hospital inpatient, and emergency department) would also be desirable to determine if the same risk factors predicted spinal malignancy in these different clinical settings.

Reference:

Henschke N, Maher CG, Ostelo RW, de Vet HC, Macaskill P and Irwig L. Red flags to screen for malignancy in patients with low-back pain. *Cochrane Database Syst Rev 2013*. 2013; 2.

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