BET (best evidence topic)

Title

As a snappy question

(e.g. Are routine chest X-rays helpful in the management of febrile neutropenia?)

Scenario

Short description of the clinical situation. Make it readable and interesting.

(e.g. A friendly, coryzal 5y old girl with ALL attends with another episode of febrile neutropenia. According to departmental protocol, her admission includes a chest x-ray. You wonder as to the value of this routine irradiation.)

Structured Clinical Question

Three or four part clinical question

In a 5y girl with febrile neutropenia [patient] does routine chest radiography [intervention] assist in management decisions or diagnose occult pneumonia? [outcome]

Search

Summary of searches performed. Start with secondary resources (e.g. Cochrane) and then pirmary resources. Describe search strategy used, hits found and hits relevant. Why exclude the others? Briefly…

(e.g. Secondary sources - nil
SumSearch - "neutropenia" and "radiography" and filter "diagnosis" -> 67 individual articles, 3 relevant.)

Summary

Use this table to fill in for your own studies. Each study should be accompanied by a longer, fuller, critical appraisal. The best way of doing this is using the Centre for Evidence-based Medicine (Oxford) CatMaker programme (www.cebm.net)

Citation	Study group (Population and comparisons)	Study type (level of evidence from the Oxford CEBM)	Outcome (one line per outcome)	Key Result Pick a key result, and try to give it as a useful number - e.g. NNT - with confidence intervals	Comments (one line per study)
Feusner et al: J Clin Oncol 1988; 6: 1699-1702	64 paediatric oncology patients with 134 episodes	Prospective cohort (4)	Prevalence of "infectious" infiltrates	3.0% (95% CI 0.81% to 7.7%)	'Infectious' infiltrate was diagnosed partly by

	of febrile neutropenia Reference standard was radiology opinion.		Diagnostic usefulness of "tachypnoea, chest pain or abnormal ausculation"	LR+ 82 (95% CI 11 to 575) LR- 0.0 (95% CI 0.0 to 0.19)	clinical findings - may exaggerate usefulness of clinical signs
Korones et al: Cancer 1997; 80: 1160-1164	54 paediatric oncology patients with 108 episodes of febrile neutropenia Reference standard was radiology opinion.	Prospective cohort (4)	Prevalence of pneumonia	3.7%, (95% CI 0.14% to 7.2%)	Only 40/54 patients received a chest radiograph
			Diagnostic usefulness of "abnormal auscultatory findings, RR>20 when afebrile or O2 sats <95% twice in 4 hours"	LR+ 17.3 (95% CI 7.9 to 38) LR- 0 (95% CI 0 to 0.79)	
Katz et al. Cancer 1998;68:940-943	131 paediatric oncology patients with febrile neutropenia. Reference standard was radiology opinion.	Prospective cohort (4)	Prevalence of pneumonia	3.1% (95% CI 0.7% to 7.8%)	Only 128/131 patients received radiographs
			Diagnostic usefulness of presence of respiratory signs	LR+ infinite (lower 95% CI 0.00) LR- 0.5 (95% CI 0.25 to 1.0)	

Commentary

Time for a short summation of the evidence, it's strengths and weaknesses, and any conclusions

(e.g. There is no good quality study addressing the use of chest radiographs in uncomplicated febrile neutropenia. Two of these studies are consistent with clinical feeling - lack of abnormal signs or symptoms in children with febrile neutropenia rules out pneumonia. The methodological weaknesses would tend to favour this - with one study having clinical features as part of the reference standard, and the second tending to fail to perform chest radiography on children without symptoms. The third study only gives data on respiratory signs (ignoring symptoms) and has a subsequently reduced sensitivity and improved specificity.)

Clinical bottom lines

Snappy one line answers to the questions posed

1. Pneumonia was uncommon in children with febrile neutropenia (~3%)
2. An absence of respiratory signs *and* symptoms made pneumonia very unlikely.

Authors

First author with e-mail address, and brief designations only -- no letters after names!

(e.g. Clare Collins (Research Fellow, Oxford Vaccine Group, Oxford) [clare.collins@paediatrics.ox.ac.uk], Matthew Fenton (Registrar in Paediatric Oncology, John Radcliffe Hospital, Oxford) and Bob Phillips (Junior Fellow, Centre for Evidence-based Medicine))