National Clinical Guideline Centre

Excluded economic studies

Pneumonia

Diagnosis and management of community- and hospital-acquired pneumonia in adults

Clinical guideline <...>

Appendix K

June 2014

Draft for consultation

Commissioned by the National Institute for Health and Care Excellence

Disclaimer
Healthcare professionals are expected to take NICE clinical guidelines fully into account when exercising their clinical judgement. However, the guidance does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of each patient, in consultation with the patient and/or their guardian or carer.

Copyright
National Clinical Guideline Centre, 2014. Confidential.

Funding
National Institute for Health and Care Excellence

Contents

1 CAP 5
1.1 Diagnostic tools 5
1.2 Severity assessment 5
1.3 Microbiological tests 5
1.4 Antibiotic therapy 5
1.4.1 Timing of antibiotics 6
1.5 Glucocorticosteroid treatment 6
1.6 Gas exchange 6
1.7 Monitoring 6
1.8 Safe discharge 6
1.9 Patient information 6
2 HAP 7
2.1 Diagnostic tools 7
2.2 Severity assessment 7
2.3 Microbiological tests 7
2.4 Antibiotic therapy 7
2.4.1 Timing of antibiotics 7
2.5 Glucocorticosteroid treatment 7
2.6 Gas exchange 7
2.7 Monitoring 7
2.8 Safe discharge 7
2.9 Patient information 7

1 CAP

1.1 Diagnostic tools

Reference	Reason for exclusion
Oppong 2013[9][NOR/SWE]	This study has been selectively excluded as the NCGC reanalysed the paper to include UK costs and the results of the applicable review.
Cals 2011[3]	This study has been selectively excluded due to the inclusion of more applicable evidence.

1.2 Severity assessment

Reference	Reason for exclusion
Jo 2012[5]	This study was assessed as not applicable with very serious limitations. The study was performed in South Korea, where the pathogens causing pneumonia are significantly different to those in the UK. In addition, the paper does not provide cost components and the calculation of cost savings does not appear correct, leading to uncertainty in the results.

1.3 Microbiological tests

Reference	Reason for exclusion
Sinclair 2012[14][CAN]	This study undertakes a cost-effectiveness analysis of pneumococcal antigen test against other tests. It has been selectively excluded due to its exclusion from the clinical review.
Oosterheert 2003[8][NET]	This study creates an algorithm to estimate the cost savings from performing gram stains and pneumococcal antigen tests. Selectively excluded due to the availability of more applicable evidence.

1.4 Antibiotic therapy

Reference	Reason for exclusion
Backhouse1995[1][UK]	Selectively excluded due to very serious limitations including the age of the study, age of effectiveness data and that the effectiveness data used in the model was selected by a panel of GPs.
Bassi 1998[2][ITA]	This study compares seven different antibiotics across three classes but only compares antibiotic costs against length of stay producing cost-effectiveness ratios, with no incremental analysis presented.
Metge2001[6]	Excluded as it was a cost minimisation analysis considering only cost of drugs.
Nicolle 1996[7][CAN]	This study compares the cost of antibiotics, nurse time and supplies when comparing ceftriaxone and ampicillin. However, no incremental analysis is performed.
Richerson1998[10][US]	This study compares azithromycin and levofloxacin, but within the model uses clinical data from File1997[4], which has been excluded in the clinical review due to methodological issues.
Rittenhouse2000[12][US]	The analysis of this study was based on the clinical trial by File1997[4] which has been excluded from the clinical review.
Rittenhouse1999[11][US]	The analysis of this study was based on the clinical trial by File1997[4] which has been excluded from the clinical review.
Siegel 1999[13][US]	Excluded as it was a cost analysis considering only cost of drugs.
vanBarlingen1998[15]	Excluded as it was a cost comparison study and no incremental cost-

Reference	Reason for exclusion
	effectiveness ratio could be calculated.

1.4.1 Timing of antibiotic therapy

None identified.

1.4.2 Duration of antibiotic therapy

None identified.

1.5 Glucocorticosteroid treatment

None identified.

1.6 Gas exchange

None identified.

1.7 Monitoring

None identified.

1.8 Safe discharge

None identified .

1.9 Patient information

None identified .

2 HAP

2.1 Diagnostic tools

None identified .

2.2 Severity assessment

None identified.

2.3 Microbiological tests

None identified .

2.4 Antibiotic therapy

None identified.

2.4.1 Timing of antibiotic therapy

None identified.

2.4.2 Duration of antibiotic therapy

None identified.

2.5 Glucocorticosteroid treatment

None identified.

2.6 Gas exchange

None identified .

2.7 Monitoring

None identified .

2.8 Safe discharge

None identified.

2.9 Patient information

None identified.

3 References

1 Backhouse RJ, Kapasi M, Noble I, Hutton J. Modelling the use of three antibiotics in the management of community-acquired pneumonia. British Journal of Medical Economics. 1995; 8:195-210:195-210

2 Bassi O, Zuccarelli S, Amalfitano ME. Clinical and economic outcomes of empiric parenteral antibiotic therapy for pneumonia: a retrospective study of 1,032 hospitalized patients. Journal of Chemotherapy. 1998; 10(5):369-374

3 Cals JW, Ament AJ, Hood K, Butler CC, Hopstaken RM, Wassink GF et al. C-reactive protein point of care testing and physician communication skills training for lower respiratory tract infections in general practice: economic evaluation of a cluster randomized trial. Journal of Evaluation in Clinical Practice. 2011; 17(6):1059-1069

4 File TMJ, Segreti J, Dunbar L, Player R, Kohler R, Williams RR et al. A multicenter, randomized study comparing the efficacy and safety of intravenous and/or oral levofloxacin versus ceftriaxone and/or cefuroxime axetil in treatment of adults with community-acquired pneumonia. Antimicrobial Agents and Chemotherapy. 1997; 41(9):1965-1972

5 Jo S, Kim K, Jung K, Rhee JE, Cho IS, Lee CC et al. The effects of incorporating a pneumonia severity index into the admission protocol for community-acquired pneumonia. Journal of Emergency Medicine. 2012; 42(2):133-138

6 Metge CJ, Vercaigne L, Carrie A, and Zhanel GG. The new fluoroquinolones in community-acquired pneumonia: a clinical and economic evaluation. Ottawa. Canadian Coordinating Office for Health Technology Assessment (CCOHTA), 2001. Available from: http://www.cadth.ca/media/pdf/112_fluoroquinolones_tr_e.pdf

7 Nicolle LE, Kirshen A, Boustcha E, Montgomery P. Treatment of moderate-to-severe pneumonia in elderly, long-term care facility residents. Infectious Diseases in Clinical Practice. 1996; 5(2):130-136

8 Oosterheert JJ, Bonten MJM, Buskens E, Schneider MME, Hoepelman IM. Algorithm to determine cost savings of targeting antimicrobial therapy based on results of rapid diagnostic testing. Journal of Clinical Microbiology. 2003; 41(10):4708-4713

9 Oppong R, Jit M, Smith RD, Butler CC, Melbye H, Molstad S et al. Cost-effectiveness of point-of-care C-reactive protein testing to inform antibiotic prescribing decisions. British Journal of General Practice. 2013; 63(612):465-471

10 Richerson MA, Ambrose PG, Quintiliani R, Bui KQ, Nightingale CH. Pharmacoeconomic evaluation of alternative antibiotic regimens in hospitalized patients with community-acquired pneumonia. Infectious Diseases in Clinical Practice. 1998; 7(5):227-233

11 Rittenhouse BE, Stinnett AA, Dulisse B, Henke CJ, Potter L, Parasuraman B et al. Evaluating the costs of levofloxacin and ceftriaxone in inpatient adults with community-acquired pneumonia. P and T. 1999; 24(4):169-179

12 Rittenhouse BE, Stinnett AA, Dulisse B, Henke CJ, Potter L, Parasuraman B et al. An economic evaluation of levofloxacin versus cefuroxime axetil in the outpatient treatment of adults with community-acquired pneumonia. American Journal of Managed Care. 2000; 6(3):381-389

13 Siegel RE, Alicea M, Lee A, Blaiklock R. Comparison of 7 versus 10 days of antibiotic therapy for hospitalized patients with uncomplicated community-acquired pneumonia: a prospective, randomized, double-blind study. American Journal of Therapeutics. 1999; 6(4):217-222

14 Sinclair A, Xie X, and Dendukuri N. The clinical effectiveness and cost of a pneumococcal urine antigen immunochromatographic test (BinaxNOW Streptococcus pneumoniae) in the diagnosis of community acquire Streptococcus pneumoniae pneumonia in patients admitted to hospital. Technology Assessment Unit of the McGill University Health Centre (MUHC), 2012. Available from: https://secureweb.mcgill.ca/tau/sites/mcgill.ca.tau/files/muhc_tau_2011_57_binaxnow.pdf

15 van Barlingen HJJ, Nuijten MJC, Volmer T, Sanderson DJ, Lacey LF. Model to evaluate the cost-effectiveness of different antibiotics in the management of community-acquired pneumonia in Germany. Journal of Medical Economics. 1998; 1:247-261:247-261