

# COMMUNITY ACQUIRED PNEUMONIA

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Community Acquired Pneumonia (CAP) is a frequent problem encountered in clinical practice. It is no longer the lieutenant of death as prophesied by William Osler. However there is still significant morbidity and mortality especially in the elderly, debilitated and the immunocompromised patients. We have at our disposal a vast array of investigative techniques and a proliferation of antibiotics. Unfortunately the steep rise in the cost of laboratory facilities and drugs, compels a rational approach to diagnosis and treatment.

A retrospective study of CAP in Hong Kong, appearing in this issue, found that routine investigations were helpful in only 20% of the patients, the choice of antibiotics was empirical, and drugs were often changed without adequate indications. The author has recommended a prospective study so that a scientific guideline to treatment could be established. It is unlikely that the management strategy locally differs markedly from the practice in Hong Kong.

Investigative procedures available for diagnosis of aetiological agents range from gram staining of sputum, C.I.E. on sputum and blood, to analysis of transtracheal aspirate. Sputum microscopy is the simplest, cheapest and safest test available. It is often overlooked or relegated to a secondary role, mainly because of the difficulty encountered in obtaining sputum, and the frequent contamination by pathogens normally resident in the oropharynx. It is heartening to know that recent reports (1) indicate gram staining and sputum culture can provide reasonably accurate bacteriological information provided sputum expectoration is supervised by a physiotherapist or a trained nurse. In a prospective study of CAP, Kalin (2) et al identified the presence of *S. pneumoniae* by sputum examination in 65% of the patients with pneumococcal pneumonia. Geckler observed, that transtracheal aspirate offered no significant advantage over expectorated sputum in establishing an aetiological diagnosis.

Chest X-rays are performed routinely to confirm clinical suspicion and to assess response to chemotherapy. Little data is available on its clinical value in the initial microbiological diagnosis. In a review of 196 cases of CAP,

Mcfarlane (3) concluded radiology was not helpful in characterising the offending pathogen. However Marc Levy (4) observed a strong correlation between bacterial pneumonia and alveolar densities on X-rays. Further prospective studies are needed to confirm the significance of radiological features as an aid to initial chemotherapy.

Choice of antibiotics is often reduced to guess work, and not infrequently determined by the physician's own preference. Selection of an appropriate drug is often hindered by the lack of epidemiological data on bacterial prevalence, contamination of sputum by oral pathogens and delay in obtaining microbiological results. In most prospective studies in Europe and U.S., *S. pneumoniae* is the commonest aetiological organism; the others encountered frequently are *H. influenzae* and *Mycoplasma*. In the light of these findings therapy with penicillins and/or erythromycin ought to be adequate in the majority of non-immunocompromised patients. In young adults presenting with fever, purulent sputum and segmental or subsegmental pneumonia on Chest X-ray, a return to normal temperature within 48 hours following therapy with erythromycin is virtually diagnostic of *Mycoplasma pneumoniae* (5). A disturbing trend noted in the U.S. and Japan is the shift in favour of newer and costlier cephalosporins (6), despite the lack of any convincing evidence to suggest the emergence of a significant number of resistant strains or change in bacterial flora.

Sophisticated investigations (7) often only complement the simpler non-invasive tests and require highly trained personnel. Newer and potent antibiotics are expensive and usually have a narrower spectrum of antibacterial activity. Furthermore a drug that achieves a serum concentration ten fold the MIC is not necessarily inferior to another that could reach 100 times the MIC. Inappropriate usage will only accelerate the emergence of resistant strains in the hospital and the community. If we are to avoid misuse of laboratory facilities, invasive techniques and overdependence on newer antibiotics, it is essential to undertake a controlled prospective study. Such a project should aim to identify the prevalence of various pathogens in CAP, determine their drug sensitivity, evaluate the relative merits of various tests, both in relation to cost and clinical value, define the role of radiology in aetiological diagnosis and in assessing response to treatment. This would enable the physician to embark on a sensible approach to the management of CAP (8) with confidence without compromising patient welfare.

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