

# Community - Acquired Pneumonia in Malaysian Patients: Addition of Macrolide and the Use of BTS "Curb" Index to Assess Severity

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Sir,

I read with interest the elegantly written CME article by Liam C K recently<sup>1</sup>. The choice of empiric antibiotic(s) in treating hospitalized adult patients with community-acquired pneumonia (CAP) is important as it can influence clinical outcomes<sup>2</sup>. As correctly pointed out by the author, patients with CAP requiring hospitalization should, in addition to a  $\beta$ -lactam stable antibiotic, be covered with a macrolide, to combat atypical pathogens such as *Legionella pneumophila*, *Mycoplasma pneumoniae*, and *Chlamydia pneumoniae*. Such is the recommendation from most foreign guidelines<sup>3,4</sup>. Here I wish to add our own observation based on a prospective study conducted between 2002 and 2004 of 141 adult patients with CAP hospitalized in Seremban Hospital in which we studied the clinical outcomes of patients treated empirically with and without a macrolide added to their  $\beta$ -lactam stable antibiotic, recently published in *Respirology*<sup>5</sup>.

Sixty-three (44.7%) patients [age (SD) 56 (20.0) years; 50.8% male] received a macrolide-containing antibiotic regime while 78 (55.3%) [Age (SD) 57 (20.2) years; 52.6% male] were on a single non-macrolide broad-spectrum antibiotic. Thirty-nine (27.7%) and 102 (72.3%) patients had severe and 'non-severe' pneumonia respectively. Irrespective of pneumonia severity, there was no significant differences in mortality ['non-severe' pneumonia: 6.5% vs. 5.4%,  $p=0.804$ ; severe pneumonia: 17.6% vs. 18.2%,  $p=0.966$ ], need of ventilation ['non-severe' pneumonia: 8.7% vs. 3.6%,  $p=0.274$ ; severe pneumonia: 23.5% vs. 13.6%,  $p=0.425$ ] and median length of hospital stay ['non-

severe' pneumonia: 5.5 vs. 5 days,  $p=0.954$ ; severe pneumonia: 7 vs. 6,  $p=0.401$ ] between the two treatment regime groups. [Figure 1 showed mortality data only].

It is important to note that our prospectively collected data was not randomized, and that factors unaccounted for might have led the clinicians to treat one patient with macrolide and not the other. Nevertheless, our study is the first Malaysian published work<sup>5</sup> that attempts to address the difficult question of what constitutes the appropriate empirical antibiotic regime in 'local' setting. The emerging circumstantial evidence that Malaysia and nearby countries have different microbial aetiology for CAP<sup>6,7</sup> signals an urgent need for regional-level microbial surveillance and its reporting. This issue of whether macrolide addition is necessary cannot be resolved easily until we have more research-based evidence that are derived from systematic comparison of clinical outcomes using standardized empirical antibiotic regimes from various hospitals and communities in Malaysia.

On another issue, CK Liam correctly pointed out that the choice of initial site for treatment and the selection of empiric antibiotic(s) depend on, amongst others, the severity of pneumonia at presentation, and he quoted the Pneumonia Severity Index (PSI) developed by MJ Fine et al<sup>8</sup>, published in 1997, for possible use in our patients. However, a simpler approach that is based primarily on four core clinical indices of confusion, serum urea, respiratory rate and blood pressure, to stratify severity of community-acquired pneumonia (aptly called 'CURB', and later 'CURB-65' to incorporate

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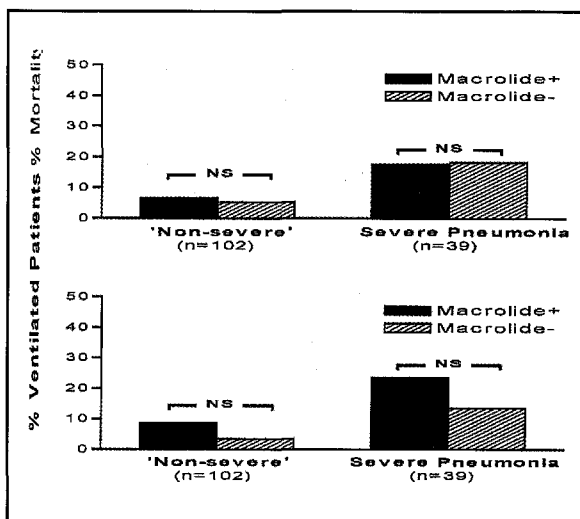
age  $\geq 65$ ), by the British Thoracic Society (BTS)<sup>3,9</sup>, has received much attention and may be more practical for busy Malaysian clinicians.

In a study<sup>10</sup> between 2002 and 2003, we prospectively studied the usefulness of 'CURB' as an index to predict in-patient mortality in 108 hospitalized adult patients (mean $\pm$ SD age: 55  $\pm$  20 years; 58% male) with community-acquired pneumonia in Seremban Hospital. Thirteen patients (12%) died in hospital while 95 (88%) survived to hospital discharge. BTS criteria fared poorly compared to clinical assessment by clinicians (specialist level and above) in predicting mortality [Table I]. The huge confidence interval observed in clinicians' severity prediction reflects real-life situation and the inaccuracies from the 'human art of medicine'.

In our Malaysian study, older age, presence of chronic illness, severity of co-morbidity, reduced oxygen saturation, and higher blood urea were associated with mortality. Multivariate logistic regression of these variables identified reduced oxygen saturation as the only independent association.

We concluded that pneumonia severity criteria validated in Caucasian patients or Western studies may not be universally applicable. The same caution should also be exercised for the use of PSI by Fine MJ *et al*<sup>8</sup> in Malaysian patients. Whether this lacklustre performance is due to unique characteristics among Malaysian patients requires more research. Also, it may be necessary for us to develop severity prediction tool

appropriate to our own setting. Nevertheless, the awareness of the potential usefulness of 'PSI' or 'CURB' for Malaysian clinicians represents an important milestone to better manage community-acquired pneumonia, especially in deciding whether patients should be hospitalized. This effort clearly should be applauded.




**Fig. I: Percentage hospital mortality of patients treated with [Macrolide+] and without [Macrolide-] addition of macrolide. NS= non-significant**

**Table I: Severity assessment: analysis of ability to predict mortality**

	RR (95% CI)	Sensitivity	Specificity	PPV	NPV
Clinical Assessment	36.4 (8.1 to 163.1)	61	95	93	71
'CURB' rule	2.5 (0.2 to 26.5)	7	96	70	51
'CURB-65' rule	2.6 (0.4 to 15.0)	15	93	71	52

PPV= positive predictive value; NPV= negative predictive value  
 Values (except for RR) are in percentage

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