

COMMENT ON: MONITORING TREATMENT PRACTICES OF CHILDHOOD ASTHMA IN SINGAPORE: A QUESTIONNAIRE STUDY

Singapore Med J 2016; 57(2): 103 doi: 10.11622/smedj.2016038

Dear Sir,

Some interesting trends were observed in the paper by Tan et al;⁽¹⁾ the questionnaire study examined the management of asthma exacerbations by primary care physicians and paediatricians. In particular, the finding that 70.5% of patients were treated with a nebulised bronchodilator as first-line management, compared with 23.1% who were initially commenced on inhaled salbutamol with a spacer device, was noteworthy. However, several weaknesses should be acknowledged in the article by Tan et al,⁽¹⁾ such as a low survey response rate and lack of clinical detail explaining asthma exacerbation severity. Nonetheless, the results of this study demonstrate poor adherence to asthma management practice guidelines among physicians.

I herein provide my observations on the deployment of nebulisers in clinical practice. In my experience, as reinforced by Tan et al,⁽¹⁾ there is widespread misuse of bronchodilators in medical circles. I believe there are two fundamental misconceptions that largely perpetuate this problem, particularly among junior staff. Firstly, the correct indications for prescribing bronchodilators are not adequately appreciated by many clinicians. Bronchodilators are indicated for obstructive airways and do not benefit patients without bronchoconstriction. Suitable indications include chronic obstructive pulmonary disease, asthma and bronchiectasis. Patients who have severe pneumonia with bronchospasm may occasionally respond to treatment with bronchodilators. Contrary to popular practice, breathlessness from non-obstructive processes, such as cardiogenic pulmonary oedema and most cases of pneumonia, does not warrant the administration of bronchodilators. There is no robust scientific evidence to suggest improved oxygenation in these conditions after such treatment.

The second reason for bronchodilator misuse is a widespread doctrine that nebuliser therapy is more efficacious than inhaler devices. The foremost use of nebuliser therapy is in patients who are too breathless to perform coordinated actuation with an inhaler and a spacer. When used in an ideal way, inhalers and nebulisers render equipotent improvement in lung function; if administered properly, inhaler therapy with a spacer device can be more cost-effective without compromising clinical benefits.⁽²⁾ I emphasise that spacers should be used whenever possible, as drug deposition using only an inhaler is inferior. Other reasons supporting inhalers as the first-line method include better inhaler technique at home and shorter hospital admission times if the change from nebuliser to inhaler is made early.

The emergency department at my institution is currently in the process of restricting access to nebulisers. As multiple doses are required when using inhalers, physicians commonly prescribe nebulisers to simplify the task of drug administration for nursing staff. This may seem appealing in a busy emergency department, but does not represent sound medical practice. It has been proposed that higher uptake of bronchodilators, delivered through a holding chamber, will reduce costs without worsening outcomes. The use of nebulised bronchodilators is suboptimal and does not adhere to clinical guidelines.^(3,4) It is important that clinicians recognise the appropriate indications for bronchodilators and the clinical settings that permit the use of inhaler devices. Nebulisers can be safely reserved for patients with extreme breathlessness. In capable patients with good technique, inhalers delivered using spacers constitute an underutilised, efficacious and more cost-effective strategy. When treating obstructive lung disease with bronchodilators, an earlier transition to inhaler therapy should be considered in most circumstances.

Yours sincerely,

Julian Yaxley

Department of Medicine, Redcliffe Hospital, Queensland, Australia. julianyaxley@yahoo.com.au

REFERENCES

1. Tan C, Wong B, Goh DY, Van Bever HP. Monitoring treatment practices of childhood asthma in Singapore: a questionnaire study. *Singapore Med J* 2009; 50:54-61.
2. Dhuper S, Chandra A, Ahmed A, Bista S, Moghekar A, et al. Efficacy and cost comparisons of bronchodilator administration between metered dose inhalers with disposable spacers and nebulizers for acute asthma treatment. *J Emerg Med* 2011; 40:247-55.
3. Abramson M, Crockett AJ, Dabscheck E, Frith PA, George J, et al. The COPDX Plan: Australian and New Zealand guidelines for the management of Chronic Obstructive Pulmonary Disease 2014. Brisbane: Thoracic Society of Australia and New Zealand; 2014.
4. British Thoracic Society Scottish Intercollegiate Guidelines Network. British Guideline on the Management of Asthma. *Thorax* 2008; 63(Suppl 4):iv1-121.