This might be the exasperated cry of any number of doctors in the Irish Health Care System, particularly in the current climate. In fact it is one of the most important decisions that physicians make in the course of our daily duties. The relative ease of access to medication sometimes facilitates its use because we can. The decision is often what medication to use rather than whether or not to treat. We must ask ourselves why do we treat illnesses? This is a complex question the answers to which are outside the scope of this article. The question does help us to underline, however, the precise aim of medical treatment for a particular illness. Is it used to improve quality of life? Or to alter the natural history of an illness? It is used to reduce hospital admission rates or decrease hospital lengths of stay? It is used to reduce morbidity or mortality in the short or long term? This can be far from clear in some instances.

Many pages in medical journals have been written on the treatment of bronchiolitis in infants. The results of these studies have generally shown no overall benefit to the use of bronchodilators, adrenaline, anticholinergics, antibiotics and corticosteroids. In a recent systematic review and meta-analysis in the British Medical Journal, Hartling and colleagues looked at the efficacy of bronchodilators and steroids alone and in combination for the treatment of acute bronchiolitis in children. Their meta-analysis suggested a beneficial effect for adrenaline on reduction of hospital admissions on day 1 of treatment.

As physicians we are charged with using the history, clinical examination and relevant investigations to make a diagnosis. Once a diagnosis has been reached we then need to determine whether to treat, and if so what treatment modality should be used. At the heart of clinical trials must be ensuring the correct diagnosis. When there are very strict diagnostic criteria available for hypertension or insulin dependent diabetes for example it can be easier to ensure the homogeneity of the trial population. When a diagnosis is a clinical one, the selection of patients for a therapeutic trial or a meta analysis of trials becomes very difficult. Reaching the correct diagnosis when an infant presents to medical services with an acute wheezing phenotype can be very difficult. There are many different wheezing phenotypes in children under 2 years of age. Some of these are related to reactive airways disease and some to acute viral infection. Many different viral infections can cause the same phenotype and additionally a single respiratory virus can cause many different phenotypes. All of this makes clinical trials and meta analyses in bronchiolitis very difficult. Can we rely on the results of a meta analysis where subject selection and diagnostic criteria are so widely variable? The answer is likely no. However with any treatment the risks and benefits must be balanced. If a drug were to produce a very substantial clinical benefit with minimal side effect, does the diagnosis matter?

In this meta-analysis the number needed to treat was fifteen patients. The treatment with nebulised adrenaline was found to be safe in the studies analysed although in itself is a potentially dangerous agent if incorrectly used. This study should be compared to a previous Cochrane review looking at the use of 3% hypertonic saline for children with bronchiolitis. This showed a clinically significant reduction in hospital stay with minimal side effects in a more homogenous study population. The study by Hartling et al looked at a vastly higher number of studies using very different selection criteria and varying formulations and doses of medications. More is not always better. There is still no uniform international diagnostic criteria for bronchiolitis. This must be the first step if we are to try to work out how to treat it effectively.

There is a need for randomised control trials of specific medications in very clearly selected and phenotyped groups of infants. All wheezing infants are not the same and our understanding of the differences between them would be facilitated by phenotype driven trials. The management of bronchiolitis among paediatricians in Ireland has been reported in the past to be extremely variable. This is unlikely to have changed significantly because of the dearth of well conducted studies based specifically around individual phenotypes of early wheezing. This study has not helped.

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References