



Magnesium sulphate for treatment of severe acute asthma

Magnesium sulphate can be used to treat patients with a severe asthma attack. It can be given intravenously through a drip into a vein in the patient's arm, or through a nebuliser, which produces a fine spray that is then inhaled. It is currently not clear how useful magnesium sulphate is in acute severe asthma or whether it is best given intravenously or by a nebuliser. We know that magnesium improves measurements of breathing ability, but it not clear whether this results in the patient feeling better or being able to avoid hospital admission.

We plan to undertake a research trial to find out whether intravenous or nebulised magnesium sulphate improves the symptoms of breathlessness in patients with a severe asthma attack and/or reduces the chances of needing hospital admission. We will use a network of up to 30 hospitals to identify 1200 patients attending the emergency department with a severe asthma attack. We will ask patients to participate in the trial. If they agree they will receive either 1) standard treatment alone, or 2) standard treatment plus intravenous magnesium sulphate, or 3) standard treatment plus nebulised magnesium sulphate. We will ask all patients to assess their breathlessness over the following two hours and then follow them up for the next month to identify any health problems. By comparing the results from the three groups of patients we will be able to establish which treatment produces the best results. We will also measure health service costs and the amount of time patients take off work to determine whether treatment with magnesium sulphate is cost-effective.