Desensitisation to antibiotics

The Leeds Method of Management. April, 2008. Desensitisation to antibiotics [online]. Leeds Regional Adult and Paediatric Cystic Fibrosis Units, St James's University Hospital, Leeds, UK. Available from http://www.cysticfibrosismedicine.com

Desensitisation to antibiotics

On occasions when there is a multi-resistant organism, it may be necessary to use an antibiotic to which the patient has had a previous allergic reaction. The patient can undergo a desensitisation regimen at the start of the treatment course. The patient will need desensitising to the drug at the start of EVERY treatment course and during any course of therapy if more than one dose is omitted.

The regimen uses a logarithmic scale, giving a total of seven doses, starting with a minute dose and increasing by a factor of ten for each subsequent dose, until the therapeutic dose for the patient is achieved. Each dose is diluted to 45 mls, given over 20 minutes and the doses are given consecutively. The whole process takes two and a half to three hours.

Once successfully completed, the full treatment course of the antibiotic can commence as normal. If any of the escalating desensitisation doses are not tolerated the process is abandoned (Etherington *et al,* 1998). If the desensitisation is unsuccessful it may be repeated at a later date with steroid and/or antihistamine cover prior to and following the procedure.

Example of a desensitisation regimen (adult patient)

Dose 1: Ceftazidime 0.004mg in 45 ml sodium chloride 0.9% (NaCl)
Dose 2: Ceftazidime 0.04mg in 45 ml NaCl
Dose 3: Ceftazidime 0.4mg in 45 ml NaCl
Dose 4: Ceftazidime 4mg in 45 ml NaCl
Dose 5: Ceftazidime 40mg in 45 ml NaCl
Dose 6: Ceftazidime 400mg in 45 ml NaCl
Dose 7: Ceftazidime 4000mg in 45 ml NaC

*The principle is the same for paediatric patients but the final dose (dose 7) is calculated using the patient's weight minus dose 6.

• Each dose is infused consecutively over 20 minutes

• If more than two consecutive doses (or 24 hours between doses) are missed then the whole desensitising regimen will need repeating

• Ensure that adrenaline (epinephrine), hydrocortisone and chlorphenamine are readily available and that the appropriate doses for the patient are known

• Some patients benefit from treatment with antihistamines pre and during desensitisation

• The patient will need desensitising to the drug at the start of EVERY treatment course

References

Etherington C, Whitehead A, Conway SP, *et al*. Incidence of antibiotic related allergies in an adult CF unit and the success rate of a desensitisation regimen. Pediatr Pulmonol 1998; Suppl 17: A427.