Near fatal chickenpox during prednisolone treatment

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Patients taking corticosteroids who are susceptible to chickenpox must receive immediate prophylaxis on contact with varicella; the steroid card should be amended

The incidence of chickenpox (varicella) is increasing; thus, the proportion of cases in England and Wales in those over 14 years of age has increased from 10% to 25% between 1970 and 1990.¹ Although usually mild among children, varicella is often severe and occasionally life threatening in adults, particularly in those whose immune systems have been suppressed by disease or treatment with corticosteroids.^{2,3} Corticosteroids are widely prescribed: over 5.5 million prescriptions for systemic corticosteroids were issued by general practitioners in the United Kingdom for the year ending September 1993 (Intercontinental Medical Statistics, personal communication). We describe a case of severe chickenpox in a patient being treated with high dose corticosteroids and put forward recommendations to reduce the risk of further cases.

Case report

We admitted a 27 year old woman with a 36 hour history of severe lower back pain. She had been taking steroids for six weeks; she started taking prednisolone 60 mg daily for idiopathic thrombocytopenia, but for the two weeks before admission she had been taking 30 mg daily. Twenty four hours after admission she developed a fever of 37.8°C and a maculopapular eruption with vesicles over the neck and shoulders. Vesicular fluid contained herpes virus particles, and we confirmed varicella zoster virus by immunofluorescence. The patient had not had chickenpox before, but she had been in contact with fellow students from her college, where there had been a number of recent cases.

We started treatment with intravenous acyclovir 10 mg/kg three times daily immediately after diagnosis. We reduced the dose of prednisolone to 20 mg daily and gave intravenous immunoglobulin to correct the thrombocytopenia. During the next 24 hours the rash became much more extensive and some lesions became haemorrhagic. Sixty hours after admission the patient was breathless and confused, with an arterial oxygen saturation of only 70%. A chest x ray film showed bilateral alveolar shadowing. A radiograph taken 24 hours earlier had been reported as normal.

We transferred the patient to the intensive care unit, where, later that evening, artificial ventilation became necessary. She was found to have rapidly progressive disseminated intravascular coagulation, renal failure (creatinine concentration 220 µmol/l), and hepatitis (alanine transaminase concentration 6700 IU/l). In addition, she developed vitreal haemorrhages with bilateral acute retinal necrosis.

After two weeks in intensive care she made a good general recovery, but, although the retinal necrosis improved considerably, she was left with poor colour vision and permanent perimacular scotomas. She has, therefore, been unable to pursue her chosen career as a knitwear designer. Nevertheless, apart from the visual problems, she was completely well and receiving no treatment 12 months after the illness.

Discussion

Our report illustrates the severity of varicella in a patient treated with corticosteroids and the speed with

which pneumonia can develop. The patient smoked 20 cigarettes a day, and it has been shown that varicella pneumonia occurs more frequently among smokers.^{4,5}

Our patient was treated with prednisolone 0.5-1 mg/kg/day, which is only half the dose at which the Department of Health recommends prophylaxis with varicella zoster immunoglobulin if contact with varicella occurs.⁶ In view of our case and two fatal cases recently reported to the Committee on Safety of Medicines,⁶ varicella zoster immunoglobulin should be given to any patient in contact with varicella who is either currently receiving or who has been treated with supraphysiological doses of corticosteroids, regardless of the duration of treatment, within the previous three months.

High doses of corticosteroids are widely prescribed in many medical specialties including haematology, chest and renal medicine, organ transplantation, and, perhaps most notably, rheumatology. Numerous published reports link corticosteroids with severe or fatal varicella, but cases still occur.⁷⁻⁹ We propose some recommendations to prevent further cases.

CHECK IMMUNITY TO VARICELLA

Patients should be asked whether they have had chickenpox as a history correlates reliably with past infection and immunity.¹⁰ Those whose history is doubtful or who claim not to have had varicella can then have their antibody status checked. In a recent study among health care workers at St Thomas's Hospital we found that 143 out of 145 subjects (99%) with a history of varicella were seropositive. Furthermore, 50 of the 58 subjects (86%) who had not had varicella or who were uncertain whether they had had it were seropositive (F Nicholson, personal communication).

Several immunoassays for the detection of past infection with varicella zoster have been described. These include fluorescent assay of antibody to membrane antigen, enzyme and radioimmunoassays, and latex agglutination. Although labour intensive, fluorescent assay of antibody to membrane antigen is generally regarded as the most sensitive and specific of these assays.¹¹ Several commercial enzyme immunoassays are now available. Used diagnostically, they usually give a result within a few hours, but their sensitivity is variable.¹² However, the new latex agglutination assay can provide a result within 30 minutes and has been shown to produce consistent results when compared with the fluorescent assay; false positive results occur at a rate of only 1-2%.¹³ The cost implications of testing should not be a problem, however, as the latex agglutination assay requires little staff time and reagents cost only £2.00 per test. The necessary skill to perform such tests should be available in most hospital microbiology laboratories.

PROPHYLAXIS FOR NON-IMMUNE PATIENTS

Patients who are seronegative must be told that they are at risk of serious complications of chickenpox and should therefore avoid visiting or working in places where there are current or recent cases of varicella. If inadvertently exposed they must immediately tell their general practitioner, so that prophylaxis can be arranged. Provided that it is given within 72 hours,

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BMJ 1994;309:1069-70

varicella zoster immunoglobulin will prevent or attenuate infection. Both the 1990 and 1992 editions of the Department of Health's handbook *Immunisation Against Infectious Diseases* recommend that such prophylaxis should be given to patients taking high doses of corticosteroids (2 mg/kg/day) with proved susceptibility to varicella if contact with chickenpox occurs.⁶ Although this handbook is distributed to all medical practitioners, many may be unaware of these particular recommendations.

Alternatively, prophylactic oral acyclovir may be considered. A recent placebo controlled trial showed that acyclovir was effective in preventing clinical chickenpox in healthy children exposed to varicella. Treated children developed subclinical or mild infections.¹⁴

In addition, in view of a recent shortage in the supply of varicella zoster immunoglobulin, an attenuated varicella vaccine could be used. This is effective in preventing infection in healthy children, provided that it is given within 72 hours of contact.¹⁵ Although of no benefit as prophylaxis after exposure in children with leukaemia because of the need to stop all immunosuppressive treatment for seven days before it can be given this vaccine has been used successfully in seronegative children taking steroids to prevent infection in hospitals.¹⁶ It is still an unlicensed preparation, however, and is only available on a named patient basis.

AMENDMENT OF STEROID CARD

A similar case was widely publicised recently in the national press.¹⁷ Although some benefit may result from drawing attention to cases such as ours through the medical press, we believe that the steroid card given to all patients being treated with high doses of corticosteroids or other immunosuppressive drugs should be amended. This card was designed in the 1950s and might now be revised to include details of the patient's history of varicella, or the results of serological studies in patients who claim not to have had varicella. The card should also emphasise the

importance of seronegative patients' reporting contact with varicella zoster or measles as soon as possible.

Amending the steroid card, however, should be seen as just one approach to patient awareness in this area. Supplementary advice should also be available in the form of a patient information leaflet. Indeed, as a result of our case, such a leaflet is being proposed for our trust.

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(Accepted 11 April 1994)

Controversies in Management

Psychotherapy—a luxury the NHS cannot afford?

More expensive not to treat

Jeremy Holmes

This is the eighth in a series of articles examining some of the difficult decisions that arise in medicine

Psychotherapy is "the systematic use of a relationship between therapist and patient—as opposed to physical or social methods—to produce changes in cognition, feelings and behaviour."¹ Psychotherapy, or perhaps more usefully "the psychotherapies," is a generic term covering a spectrum of treatments that can be grouped under four main headings: analytic therapy, cognitive behavioural therapy, systemic (or family) therapy, and creative therapies such as psychodrama and art therapy. Each of these can be brief or long term and delivered to individuals, couples, or families and groups. I shall consider the case for the psychotherapies under three main headings: empirical, economic, and ethical.

Controversy about the empirical evidence for the value of psychotherapy continues, although the debate has moved on considerably since Eysenck's ill fated attempt to discredit it in the 1950s. Meta-analysis has provided overwhelming evidence for the usefulness

of psychotherapy, which produces "effect sizes" of around 0.8-1.0.² This means that the average patient having psychotherapy does better than 85% of control subjects. This kind of outcome is comparable with that found with antidepressant drugs, and far better than those found in some medical trials. For example, in a study of aspirin in the prevention of heart attacks the effect size was 0.32, and trials were discontinued on the basis of this figure, because it was thought unethical to withhold such an effective treatment from control subjects.³

The debate has now moved on from considering psychotherapy's overall effectiveness to questions such as which forms of therapy are suitable for which conditions, what "dose" is likely to produce greatest benefit, and what are the active ingredients and non-specific factors of different psychotherapy treatments? Some of the most robust recent research findings can