aged 40–45 in whom the outcome of treatment to delivery is known. No more than four oocytes were transferred and the rates of conception, clinical pregnancy, and delivery per cycle were, respectively, 17·5% (n = 61), 13·5% (n = 47), and 7·5% (n = 26). If those responding poorly to ovulation induction were excluded from treatment (ie, one to three oocytes recovered), the respective pregnancy rates would be 21% (n = 46), 17% (n = 22), and 10% (n = 22). The successful patients would have been denied their own genetic offspring if ovum donation had been implemented for all women aged 40 and over.

Navot and colleagues used oocytes from infertile women for their donation programme. However, surveys indicate that infertile patients prefer to have their left-over oocytes fertilised and cryopreserved for their own potential future use rather than used for research or donation.[3]

There should be a flexible approach to assisted conception treatment, especially in older women. In patients responding well GIFT is preferred to IVF in those with patent tubes, but IVF may still have some place in those with occluded tubes, especially if the resultant embryos are transferred into a hormonally controlled subsequent cycle after cryopreservation, as suggested by Navot and colleagues. Poor responders and those failing GIFT treatment may benefit from oocyte donation.

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Spongiform leucoencephalopathy after inhaling heroin

SIR,—Spongiform leucoencephalopathy is a neurological complication of heroin addiction.[1] 47 cases have been reported from the Netherlands[1] and 1 from Germany;[2] the cause was thought to be an unknown toxin factor. There have not been any other such patients recorded since 1983. We report two Spanish patients with this condition after inhalation of heroin.

Patient 1—A 43-year-old man presented with a progressive gait disorder which had evolved over one month. He smoked heroin but had never injected it. He had cerebellar ataxia and bilateral pyramidal signs. A cranial computed tomographic (CT) scan revealed symmetrical hypodensity of the cerebral and cerebellar white matter without contrast enhancement. Cerebrospinal fluid was normal. He was negative for HIV-1. Cellular and humoral immunity were normal. The patient regressed neurologically, eventually to coma, and died three weeks after admission. Necropsy showed cerebral swelling with flattening of the gyri, narrowing of sulci, and small bilateral and symmetrical uncal herniations. Extensive white-matter spongiosis and vacuolisation affecting brain and cerebellum were seen microscopically. Oligodendroglia had partly disappeared from the most affected areas whereas axons were easily detectable. Grey matter was normal with the exception of some cromatolytic neurons in the motor cortex and nucleus of the third cranial nerve.

Patient 2—A 40-year-old man presented with dysarthria and a progressive lurching gait which had evolved over three months. He smoked heroin and cocaine. He had cerebellar speech and ataxia, with no other abnormalities. A cranial CT scan revealed symmetrical hypodensity of the cerebellar white matter and internal capsules without contrast enhancement. Magnetic resonance imaging of the head showed involvement of cerebellar white matter and internal capsules, hypointense on T1 weighted images and hyperintense on T2 weighted images. Cerebrospinal fluid was normal. He was HIV-1 seronegative. Cellular and humoral immunity were normal. Very-long-chain fatty acids in plasma were normal. A cerebellar biopsy showed striking vacuolisation of the white matter with some hyperplastic astrocytes. Three months later cerebellar function was improving.

These patients had characteristic clinical, laboratory, and neuropathological findings.[1] Heroin was acquired in Madrid. The disease developed in the 2 patients at the end of 1985 and 1989, respectively. An analysis of drug samples by the National Toxicology Institute during 1985–87 (*Bulletin on Narcotics*, vol 41, p 121) detected heroin adulterants: caffeine, phenobarbital, methaqualone, procaine, piracetam, and lignocaine. None of these substances is known to produce this type of leucoencephalopathy.[3] Our findings indicate that this complication may well not have disappeared.

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Chimaeric CD4 monoclonal antibody in treatment of generalised pustular psoriasis

SIR,—Psoriasis vulgaris may, albeit rarely, progress to a severe and occasionally fatal disease also known as generalised pustular psoriasis and characterised by erythroderma, oedema, pustulation, scarlatiniform peeling, malaise, fever, and leucocytosis. Although the histological hallmarks of the fully expressed psoriatic lesion are hyperproliferation of keratinocytes and epidermal accumulation of granulocytes, the initial phase is dominated by epidermal infiltration of activated CD4 T lymphocytes, suggesting a primary immune trigger for the inflammatory and hyperproliferative process.[1,2] Therapeutic efforts aimed selectively at the CD4+ T lymphocyte subpopulation might therefore be warranted.

Monoclonal antibodies to the CD4 antigen have proved remarkably effective in the control of experimental autoimmune diseases.[3] Here we report on the use of a genetically engineered chimaeric human/mouse CD4 monoclonal antibody (cM-T412), in which the murine constant portions of the immunoglobulin H and L chain have been replaced by the equivalent segments of human IgG_1.[4] A murine CD4 antibody with similar specificity (M-T151) has been effective in rheumatoid arthritis.[5] The chimaeric CD4 antibody was used to treat a 63-year-old man with severe generalised pustular psoriasis that had developed following oral administration of steroids. At the time of hospital admission, pustules had been spreading over the back of the feet, lower legs, arms, and groin. There was general desquamation and extensive peripheral lymphoedema, with hypoalbuminaemia and incipient bilateral pleural effusions.

With the patient's informed consent he was given intravenous infusions of alternating doses of 10 and 20 mg CD4 antibody on days 1, 2, 3, 6, and 7. Topical therapy consisted of bland emollients. 2 days after the first infusion the pustules had dried off; by day 11 the erythroderma, desquamation, and oedema had disappeared. The psoriatic plaques on his knees and elbows, present since the age of 19, also disappeared (figure). A slight relapse of erythroderma on day 14 was controlled by an infusion of 20 mg cM-T412. Single guttate lesions developing after day 27 responded well to oral psoralen photochemotherapy and etretinate.

The clinical improvement was accompanied by a decline in serum C-reactive protein from 16·4 mg/dl before antibody therapy to 8 mg/dl on day 11 and to 1·6 mg/dl on day 20. The leucocyte count dropped from 19·8 to $5·4 \times 10^9$/l, while total serum protein increased from 4·9 to 7·0 g/dl. As observed in the rheumatoid arthritis patients[5] the CD4 T-cell count decreased rapidly and the CD4/CD8 T cell ratio fell from 1·8 to 0·5. Histological evaluation of the skin revealed a distinct loss of T lymphocytes from the inflammatory infiltrate (a more detailed account will be reported elsewhere).

Our observations suggest that CD4 monoclonal antibody infusion has a therapeutic effect in this severe form of psoriasis and support the hypothesis that CD4 T lymphocytes have a pathogenetic