

## Persistently poor pregnancy outcomes in women with insulin dependent diabetes

*Success in some countries shows that these can be reversed*

See pp 275, 279

Women with insulin dependent diabetes no longer “give birth astride of a grave.”<sup>1</sup> By the time of the St Vincent declaration in 1989, with its goal of near normal pregnancy outcomes for diabetic women, non-randomised studies from specialist centres had clearly shown major reductions in fetal and neonatal loss down to 2-4%.<sup>1,2</sup> At the time, Drury proclaimed that “malformations constitute the last bastion to be conquered” among pregnant women with insulin dependent diabetes.<sup>1</sup> Non-randomised studies suggested that, with careful family planning and tight control of preconceptual glycaemia, even malformations could be reduced to near background rates.<sup>3</sup> It is therefore disappointing that the first published papers on this target of the St Vincent declaration, reported in this week’s *BMJ* (pp 275, 279), indicate no local improvement in the rate of either mortality or malformation.<sup>4,5</sup>

Why is it that in these two studies of populations in England the declaration’s goal has not been achieved? The randomised Diabetes Control and Complications Trial confirmed major reductions in malformation rates with tight glucose control.<sup>6</sup> Even before this trial, pregnancy outcomes had started to improve in Scandinavia. Data from the pregnancies of 557 Swedish women with insulin dependent diabetes had shown similar rates of spontaneous abortion between diabetic and non-diabetic women, as well as lowered rates of major malformation—2.0% in the diabetic cohort compared with 4.8% 10 years previously and 1.0% in the controls.<sup>7</sup> A decline in malformation rates had also been shown in Denmark.<sup>8</sup> Unpublished data presented at the fourth St Vincent conference suggested that Norway has normalised pregnancy outcomes among diabetic women. Perhaps Scandinavian and British care processes should be compared to identify methods for improving outcomes.

The fact that normalisation of pregnancy outcomes can occur supports the view that the goal of the St Vincent declaration can be achieved by systematically identifying and addressing the barriers to optimising glycaemia. It is therefore worth noting that neither of the latest studies provide a measure of glycaemia that can be compared with other studies. Clearly a standard method for comparing haemoglobin A<sub>1c</sub> needs to be agreed. This should allow continuous improvement in the mean population haemoglobin A<sub>1c</sub> by creating benchmarks. Moreover, the regular measurement of

haemoglobin A<sub>1c</sub> would provide individual patients with an objective measure of their progress and could be used to postpone pregnancy until an acceptable level of glycaemia was achieved.

Although improvements in population and individual glycaemia may be possible, achieving euglycaemia is difficult and not without risk. In the Diabetes Control and Complications Trial, with its well motivated subjects, only 44% of all patients had a haemoglobin A<sub>1c</sub> concentration within the reference range at least once during the whole study.<sup>9</sup> As the haemoglobin A<sub>1c</sub> concentration improved, the frequency of hypoglycaemia increased and became a barrier to euglycaemia. The treatment regimen had to be carefully tailored to individual patients, requiring structured and intensive input by experienced members of the diabetes team. Such input includes frequent (perhaps even daily) contact with the diabetes team to discuss results of self monitoring of blood glucose. This is particularly important in pregnancy to keep abreast of the rapidly changing requirements for insulin. Whether this input was provided in the current studies was not reported. Newly developed drugs able to reduce the variance of glycaemia in individual patients may allow further improvements to occur (for example, the amylin and fast acting insulin analogues and better long acting insulin preparations).

It would therefore seem that regular measures of haemoglobin A<sub>1c</sub> linked to intensive preconceptual specialist care, along with benchmarking with other centres, should ensure that the St Vincent targets are reached. However, unplanned pregnancies and pregnancies in women who have not received preconceptual care remain common, and pregnancies among fertile women with non-insulin dependent diabetes seem to be at similar risk to those among women with insulin dependent diabetes.<sup>10</sup> For these patients, the services for non-pregnant women need to be as effective as for those attending preconceptual and antenatal clinics. Diabetes services in general therefore need to be reconfigured to optimise glycaemia over the whole population. To achieve this, there is a need for a more integrated approach between primary and secondary care, increased use of information technology, implementation of existing guidelines, and the development of methods for maximising patient empowerment.<sup>11,12</sup> Staffing levels and the immediate costs of care will have to increase,

but intensive therapy has already been shown to represent "good value."<sup>13</sup> The final barriers to achieving the St Vincent goals for pregnancy are likely to be political: dependent on the integration of care between primary and secondary providers and obtaining the funding to provide the services.

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## Refugee doctors in Britain: a wasted resource

*Helping them would help the health service*

The exact number of refugee doctors in Britain is not known. Estimates suggest there are at least 200, equivalent to the annual output of a typical medical school. The disproportionate number of doctors among refugees is a phenomenon that has been observed in earlier waves of exiles, notably those fleeing Germany and central Europe in the 1930s. Refugees have made substantial contributions to professional life in Britain, particularly in medicine and science.<sup>1,2</sup> The profound and all embracing sense of loss experienced by refugees<sup>3,4</sup> is compounded for the many who are professionals, who feel that their skills and knowledge are unused while they must depend on welfare.<sup>5</sup> They represent a waste of human potential that deserves greater attention and action from the medical profession.

To practise in Britain doctors who qualified overseas must first gain limited registration with the General Medical Council (GMC) through one of four routes: sponsorship, membership of a royal college, passing the Professional and Linguistic Assessment Board (PLAB) test organised by the GMC, or "requalification" through the United Examining Board. Sponsorship is open only to those returning to their country of origin, and pass rates for college and board exams are low. Most overseas doctors opt to take the PLAB test. After achieving a good pass in the prerequisite International English Language Testing System (IELTS)<sup>6</sup> candidates sit a clinical exam, which, from next year, will include an Objective Structured Clinical and Oral Exam (OSCOE).<sup>7</sup>

No one would argue with the need for doctors who qualified overseas to demonstrate that their skills are of a high enough standard to practise in Britain. The profession and the state have invested the GMC with the responsibility of protecting society from deficient doctors.<sup>8</sup> Refugees are disadvantaged, however, in comparison with other overseas doctors seeking registration for several reasons: extreme financial hardship

(some receive no state benefit since the Asylum Bill 1996); psychological distress associated with loss, persecution, and the ambiguity of their legal status; the cost of exam fees, which is likely to rise with the introduction of the OSCOE; lack of opportunity to prepare for clinical exams, especially because of the haphazard provision of clinical attachments; long waiting lists for retaking the PLAB test; unhelpful feedback after failure; and racism. Given the repeated findings of racial discrimination against Asian graduates from British medical schools,<sup>9,10</sup> it seems reasonable to infer that graduates from overseas schools must face even greater discrimination in their search for careers advice, clinical attachments, and, once having secured limited registration, jobs.<sup>11</sup>

*See p 274*

### Steps for facilitating integration of refugee doctors into NHS workforce

- Establish network of clinical attachments through collaboration between the regional postgraduate deaneries, the royal colleges, health authorities, and trusts
- Ensure appropriate careers advice through colleges and deaneries and non-governmental organisations such as World University Service and the BMA
- Provide more bursaries for travel and subsistence for clinical attachments and cost of the Professional and Linguistic Assessment Board's (PLAB) test
- Provide revision courses and "mock" exams for the Objective Structured Clinical and Oral Exam (OSCOE)<sup>7</sup>
- Reduce waiting lists to take and retake the PLAB test
- Provide constructive feedback on areas of deficiency after the PLAB test
- Review the role and practice of the United Examining Board
- Continue to expose and challenge racism

Over the years several institutions and agencies have developed considerable expertise in helping refugee doctors, notably Southwark College, which helps with preparation for the PLAB test, and the World University Service, which provides careers advice. A few organisations, including the BMA, help selected individuals. Recently a group of academics, teachers in adult education, non-governmental organisations, and refugees met to coordinate activities helping refugee doctors to achieve their maximum potential. A study group, initiated by refugees, has started in east London. At a one day workshop in June organised by the Jewish Council for Racial Equality, delegates proposed that a forum for refugee doctors be set up to represent the doctors and take these activities further.

Although support and training are available for refugee doctors, these are unstructured, often expensive, and difficult to access. Despite the efforts of a dedicated few, very little help is provided by the medical community and none is funded by the NHS. The BMA has a stated commitment to exposing human rights abuses.<sup>12</sup> Paradoxically refugee doctors are often the ongoing victims of such abuses, frequently because they refused to participate in persecution and torture.<sup>13</sup>

Workforce predictions indicate that 500 additional new doctors are required annually in Britain,<sup>14</sup> each one costing around £200 000 to train.<sup>15</sup> For very much less, a package could be developed to integrate more refugee doctors into the workforce (box) and thus satisfy what the United Nations High Commission for Refugees considers one of the three rights of refugees: local integration without dependence on welfare.<sup>16</sup> Although safeguards against so called bogus refugees would be needed, overall this could be a "win-win" situ-

ation, not only helping to relieve the consequences of human rights abuses but also satisfying Britain's healthcare needs.

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## Young adults with arthritic hips

*Should be offered alternatives to total hip replacement*

Total hip replacement, about 40 000 of which are performed annually in the United Kingdom, is widely believed to be the only viable surgical treatment for arthritis of the hip. While total hip replacement is extremely effective for late middle aged or elderly patients, such that more than 95% of patients will probably die with their original implant in situ, the operation has limitations in younger people. The replacement has to last much longer, and young patients, unless restricted by some more generalised disease, tend to overload artificial joints with unrestricted activity. The long term results in this age group are therefore poorer, with several series reporting 25-30% of cases needing revision by 15 years (H Malchau, P Herberts, annual meeting of American Academy of Orthopaedic Surgeons, Atlanta 1996).<sup>1</sup>

So, can anything else be done, and if so, when should patients be referred? Fortunately, there are several possibilities (M D Northmore-Ball, S R D'Souza, J Varughese, A M R New, meeting of European Hip Society, Helsinki 1996). Hips that fail early do so through secondary rather than primary osteoarthritis.

In secondary arthritis, an insult to the hip at birth or during growth produces a joint of abnormal shape in the adult, which causes unfavourable biomechanics and overload. This overload causes cartilage breakdown and osteoarthritis.<sup>2</sup> The initial insult may or may not be known to the patient. With appropriate surgery the abnormality can often be corrected and the insidious arthritic process arrested and sometimes reversed.

The best example is acetabular dysplasia, a type of congenital dislocation. This is probably much more common than usually believed, one estimate giving it as the cause of over 40% of all osteoarthritis of the hip in adults.<sup>3</sup> The acetabulum is shallow and too vertical; the hip is overloaded and gradually subluxes. The patient, usually female, is otherwise perfectly fit, but one or both hips begin to ache. There is usually no history of hip disorder, and the hip has an excellent range of movement. Though a plain x ray examination shows a shallow maldirected acetabulum, the changes may be very slight. In view of the patient's youth and the near normal clinical picture, little may be thought appropri-

ate. However, timely operative treatment will relieve the symptoms. By studying the dysplasia with special x ray studies and computerised tomography, extension, abduction, and rotational correction angles are estimated. The acetabulum is then disconnected from its bony attachments by a periacetabular osteotomy,<sup>4</sup> moved through these angles, and refixed. This restorative procedure is much more time consuming and complex than total hip replacement, but will greatly slow down or prevent the otherwise inevitable deterioration of the hip which would eventually require replacement. No controlled trials exist, but a recent case series has shown maintenance of symptomatic improvement, with no development of osteoarthritis in about 80% of patients treated by acetabular redirection at an average age of 10 years.<sup>5</sup>

Other kinds of joint-saving operations are possible. If, on referral, the dysplasia is felt to be too severe or the hip too subluxed for a periacetabular osteotomy, a Chiari transverse pelvic osteotomy can be made just above the hip,<sup>6</sup> bringing a load bearing iliac buttress into position just above the head, again deferring replacement. Femoral osteotomy may also sometimes be appropriate, even in the presence of marked osteoarthritis,<sup>7</sup> and other osteotomies have a specific place, such as rotational or intertrochanteric osteotomies for avascular necrosis.<sup>8</sup> As in patients with mild dysplasia, those with avascular necrosis may be misleadingly normal on clinical examination, with rather benign x ray appearances. Combined pelvic and femoral osteotomies are also sometimes indicated.

If an osteotomy is not appropriate, arthroscopy,<sup>9</sup> a technique still in its infancy, may have a place, although arthroscopically treatable hip problems are less common than treatable knee problems and the procedure is less straightforward.

If none of the above are possible and the patient is severely disabled, replacement after all may be the only option. However, in some young men in their late teens or twenties, arthrodesis (fusion) may be appropriate.<sup>10</sup> In these days of hip replacements it is not easy to persuade someone to have this done, but pain relief is good and the hip is preserved for replacement when needed, perhaps 20 or even 50 years later. Which is the best type of replacement is still controver-

sial and beyond the scope of this editorial. Resurfacing by prosthetic double cups, which preserves the femoral head, is in theory very attractive. But many such prostheses have failed, and, though some promising new designs are available,<sup>11</sup> the place of resurfacing is not yet established. Further research is needed. Normally, therefore, total replacement is the only option. This is likely to be extremely effective in the short and medium term, but is a "one way street" with irreversible loss of bone stock as well as the strong likelihood of revision while the patient is still young—however carefully the replacement is carried out. In contrast, in the other procedures listed above, notably osteotomy, bone stock is preserved. Although other possibilities—such as cartilage grafting and wear resistant implants fixed, perhaps, with bioactive cement—may become possible in the future, several useful alternatives are available now and should be considered in all young adults with arthritic hips.

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## Fungal infections in critically ill patients

*Rates are rising but diagnosis and treatment remain difficult*

The microbial threat posed by nosocomial fungal infections in critically ill patients has become increasingly apparent in the past 30-40 years.<sup>1</sup> Fungi (predominantly candida species) are now among the most frequently isolated organisms in intensive care units. Two years ago, Pittet and Wenzel reported a 12-fold rise in the reported rate of candida infections in a 12 year study of over 250 000 patients.<sup>2</sup> This trend has been confirmed in other studies in the United States<sup>3</sup> as well as in Europe.<sup>4</sup> The species identified most often has been *Candida albicans*, but other

species (notably *Torulopsis glabrata* and *Candida tropicalis*) are being isolated ever more often and are associated with more complications and a higher mortality.<sup>5</sup>

Making a diagnosis of candidiasis may often be difficult, but the risk factors are well known and most are commonly found in intensive care units. The presence of one or more risk factors should heighten clinical suspicion. Treatment with broad spectrum antibiotics (and so suppressing the normal intestinal flora<sup>6</sup>) is the single most important factor in promoting overgrowth

of candida. Prophylactic antifungal treatment may sometimes be responsible for fungal infections by species other than *Candida albicans*.<sup>5</sup> Among the other risk factors are a high score on the APACHE (acute physiological and chronic health evaluation) II scale; prolonged ventilation; the presence of intravascular or urinary catheters; total parenteral nutrition; and immunosuppression, which may be induced by major surgery, trauma, burns, cancer, bacterial sepsis, diabetes, steroids, chemotherapy, and immunosuppressive treatment after transplantation.<sup>7</sup>

The fungi that cause the infections normally live as commensals in the gut lumen and on mucocutaneous surfaces (skin, oropharynx, and vagina). The susceptible host may be infected either endogenously by organisms from his own gastrointestinal tract or exogenously through hand contact as a result of a breach in hospital policies for infection control.<sup>8-9</sup> Just how intestinal candida get into the bloodstream is not yet certain.<sup>10</sup> Translocation across the gut mucosal barrier has been shown to occur in animal experiments, but some form of mucosal disruption may also be required. Percutaneous intravascular catheters are an important portal of entry for candida, but, fortunately, removal of the catheter usually leads to recovery.<sup>11</sup>

The main problem in dealing with candida infection in an intensive care unit is distinguishing between simple colonisation and invasive or disseminated infection. A diagnosis of invasive disease requires the presence of the fungus in normally sterile tissues, while dissemination is defined as invasion of non-contiguous organs secondary to haematogenous spread.<sup>7</sup> The problem is worsened by the many patients with severe infections who have negative blood cultures, while a positive blood culture does not necessarily indicate dissemination.<sup>7-10</sup> Fever and organ dysfunction are common in critically ill patients, but failure to identify and treat those with disseminated fungal infection will result in a high mortality.<sup>12</sup> Yet candida is a normal component of human commensal flora, and by no means every patient with a positive fungal culture needs treatment. This problem is made more complex by the accumulating evidence that colonisation may precede and lead to infection. If multiple sites are colonised there will be an increased risk of severe infections in patients recovering from abdominal surgery.<sup>13</sup> In practice the chances of invasion or dissemination can be predicted by the extent of pre-existing colonisation—an observation made in several intensive care units, including our own.<sup>12-14-15</sup>

With so many variables, the diagnosis of candida infection in practice remains a clinical decision based on inference. Disseminated fungal infection may be diagnosed with certainty if a patient develops endophthalmitis or a positive fungal culture is made from an organ such as the kidney or lung.<sup>1-7-10</sup> However, the number of positive blood cultures or number of colonised sites required for such a diagnosis remains uncertain.<sup>7</sup>

If diagnosis is difficult, so is treatment. Prophylactic treatment is generally considered to be unwarranted, even for high risk patients.<sup>7-16</sup> Whether to give early treatment to high risk patients with evidence of substantial colonisation is controversial. Some authorities have suggested starting antifungal treatment if

candida is recovered from multiple sites (urine, sputum, or a surgical drain).<sup>10</sup> The British Society for Antimicrobial Chemotherapy (BSAC) has proposed that empirical treatment should be given to patients with candiduria or heavy colonisation at other sites if their clinical condition is deteriorating.<sup>16</sup> This issue remains to be tested in well designed trials. The society recommends treatment in four sets of circumstances in which infection is unequivocal: firstly, a single positive blood culture in a patient who is at risk; secondly, isolation of candida from any sterile site (except urine); thirdly, positive identification of yeast on microscopic examination of a sterile specimen before the results of culture are available; and, fourthly, positive histological features in tissue from patients at risk.

Two drugs are in use as standard treatments for candida infections: amphotericin and fluconazole. A third drug, flucytosine, is used as an adjunct. The general lack of toxicity of fluconazole makes it an attractive alternative to amphotericin now that encouraging reports of its efficacy have appeared.<sup>11</sup> Patients who fail to respond to fluconazole may respond to itraconazole, although cross resistance between the various azoles is common and there is little evidence about its efficacy.

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# Medicines information—leaving blind people behind?

*Manufacturers should provide information in large print, braille, or audiotape*

All new medicines in Britain must now come with a comprehensive manufacturer's leaflet inside the pack. Within two years all existing medicines will also include such a leaflet.<sup>1</sup> This is the most important change for over a decade in the provision of information to patients. However, the claimed benefits from these leaflets will not be available to the 1.7 million people in Britain with impaired vision.<sup>2</sup> Most visually impaired people are elderly,<sup>2</sup> a group that is prescribed nearly half of all prescription drugs.<sup>3</sup> Most live alone and have to rely on friends, families, or neighbours to read information for them. When this is medical information, the preference for privacy and confidentiality is obvious.

If the move towards patient empowerment is to succeed, patients need information to guide their choices.<sup>4</sup> The Royal National Institute for the Blind's "See it Right" campaign makes the point that visually impaired people have a right to equal access to information, including medical information.<sup>5</sup> We live in an information age, and sighted people take for granted the array of information at their disposal that allows them to make informed choices about important matters. Blind and partially sighted people have effectively been excluded. A recent survey of over 500 randomly selected people with visual impairment showed that 67% found medical information difficult to get in an accessible format.<sup>6</sup>

Extending the benefits of written information on health related issues requires a multifaceted approach. Blind and partially sighted people are not a homogeneous group. They are of all ages and backgrounds, with different eye conditions, and so need information presented in different ways. However, providing accessible information does not have to be complicated or time consuming. Advances in technology allow information to be produced rapidly in braille, large print, audiotape, and computer disk.

Providing information with clear print will benefit all readers, but especially visually impaired people, 60% of whom consider themselves to be print readers. Using a simple typeface in large bold print with contrasting colours for text and background on good quality matt paper can make all the difference for someone with poor sight.<sup>5</sup> Optical scanners can read and translate information onto computer if the text is reasonably clear. If the leaflet is also well designed and contains well written, jargon free text, this will benefit both sighted and visually impaired people.

The advent of cheap tapes and tape recorders has revolutionised the way many blind and partially sighted people can use information. But it is not suitable for everyone: only a third actually own a tape recorder—although this number is rising—and one in three older people suffer impaired hearing, which limits more widespread use of tapes.

Braille is most likely to be used by people with minimal remaining sight whose blindness occurred early in life. Although the number of people fluent in braille is quite small (only 19 000 in Britain), for many,

notably deaf-blind people, it is their only means of communication. Many others know enough to be able to read braille labels. Braille can be produced using specialist computer software or by a simple hand held gun that produces braille on an adhesive strip.

Telephone helplines can provide an immediate and relatively inexpensive means of communication,<sup>7</sup> either one to one or via recorded information. Three quarters of blind and partially sighted people possess a telephone, but this still leaves a quarter who do not. Most blind and partially sighted people are on low incomes and so may be deterred by telephone charges. It is therefore good practice to offer telephone services on 0800 (free) or 0345 (local rate) numbers.

For the foreseeable future, information leaflets in drug packs, produced by industry, will be the main route for providing medicines information to patients. Manufacturers need to recognise the needs of visually impaired patients and consider making the information available in large print, braille, or on tape. Visually impaired people should be able to quickly obtain the information in their preferred format without extra cost. One option is a telephone help line for requesting copies of alternative media or for providing information itself. Patients can be informed about the availability of such alternatives via their pharmacist, doctor, or nurse. In addition, these alternatives should be promoted through a mention in the standard leaflet (preferably in large print and braille). Similar "sign posting" could be used for other groups for whom leaflets present problems—for example, by using an agreed symbol for a helpline for people with reading difficulties, and a message in the relevant language indicating the availability of a foreign language leaflet.

Access to information about a medical condition or treatment is a basic human right that visually impaired people have traditionally been denied. The introduction of universal drug information leaflets heralds a new era for patient empowerment that should not be denied to any patient group. Bank statements, telephone bills, and even best selling novels are now available in large print, braille, or audiotape. It is now time for medical information to follow suit.

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