

Good Health

By JEROME BURNE

CANCER treatment is rarely quick and easy. First you have a biopsy, then you wait for the results. Then you undergo the harsh therapies — surgery, radiotherapy, chemotherapy — to cut out or poison the tumour.

But for some cancers that regimen could be about to change; earlier this month a new clinic opened offering a breakthrough treatment that relies solely on light to diagnose and treat the disease.

Photodynamic Therapy (PDT) is much gentler on the patient, and can be more effective than standard cancer treatments. It relies on tumour-killing drugs that are activated only by light.

In the case of skin cancer, for instance, a cream containing the drug is rubbed onto the area; a light is then shone onto it for 20 minutes. This makes the drug generate a form of oxygen that destroys tumours in one go, without damaging the underlying structure of the surrounding tissue — and so greatly reducing the scarring, if any. (Patients describe the treatment as a 'tingling' sensation).

The same principle works for cancers inside the body, as long as you can get a light to them at the end of an endoscope (a flexible tube). For these areas, such as the lungs or the gut, the patient takes the drug and waits up to 24 hours for it to be absorbed by the tumour from your bloodstream. Activating the drug with light then takes no longer than an hour and patients can often go home immediately.

Photodynamic therapy has been used for a number of years at the National Medical Laser Centre based at University College Hospital, London. Now there is another clinic at the hospital offering diagnosis as well as treatment using light — all in a single day.

'For the first time we've brought together cutting edge optical scanners which can diagnose and locate tumours quickly and precisely,' says Colin Hopper, director of the Mandi Rix clinic. 'These tools promise in the long term to cut out the business of taking biopsies and waiting for results and then going for surgery or radiotherapy.'

ONCE you've got a diagnosis, which can be done in minutes, we can then treat you with PDT, which is quick and non-invasive because it also uses light,' says surgeon Mr Hopper. Current diagnostic devices such as mammograms or smears need to have their findings confirmed by biopsy — where a small piece of the suspect tissue is surgically removed then assessed under a microscope.

But these new techniques have the potential to tell whether cells are cancerous immediately.

One of them, called ESS (Elastic Scattering Spectroscopy), is 95 per cent accurate in identifying breast tumours. 'You could think of ESS as a kind of optical "radar",' says Mr Hopper.

'In the case of cancer of the gutlet, for example, a small probe can be sent into the mouth or down the throat to send a pulsed beam of light onto the area. The light then bounces back to an array of detectors and a computer analyses the changes in the returning beam.

'This gives you all sorts of information about the underlying

structure of the cells. If they are cancerous, their structure appears different from a healthy cell.' Another technique (fluorescent spectroscopy and imaging) relies on the fact that cancer cells reflect more of certain types of light.

Photodynamic therapy is currently licensed for treating cancers of the skin, head and neck and the oesophagus. Not only has it been shown in trials to be effective for these — while sparing patients the trauma of surgery — it is also cost-effective.

'A surgical operation to remove a tumour on the head or neck costs £17,000,' says Mr Hopper. 'Destroying the same sort of

tumour with PDT costs £4,500.' Yet despite its benefits, until recently it has been largely ignored as a cancer treatment. When Good Health first wrote about photodynamic therapy two years ago, our coverage sparked huge reader interest, with many cancer patients angry that it had not been offered to them instead of surgery.

However, recently the treatment has attracted the support of a number of influential cancer experts including the eminent Sir Walter Bodmer, Head of the Cancer and Immunogenetics Laboratory at the University of Oxford and previously Director

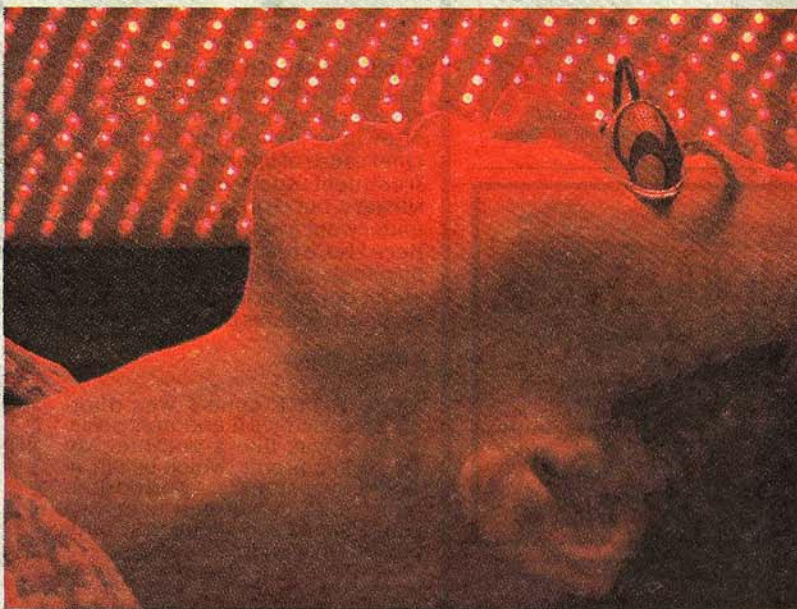
General of the Imperial Cancer Research Fund.

'PDT could be as big an improvement in treating certain sorts of cancer as herceptin was for breast cancer,' he says. 'In those parts of the body where we know it works — on the skin, in the head and neck and down the oesophagus, it certainly seems superior to existing treatments. It is less damaging to the patients and very effective.'

The Government's cancer czar, Professor Mike Richards, has been meeting researchers and experts in the treatment.

'I've commissioned a review of PDT's effectiveness which should

Beams of light can now be used to diagnose cancer AND treat it — with none of chemo's harsh side-effects. So why aren't patients being told?



Picture: ALAMY

THE LIGHT FANTASTIC

report early next year,' he says. 'If photodynamic therapy turns out to offer a better deal than existing treatments, it should soon be available right across the country.'

As Sir Walter explains: 'Assuming the review is positive, it will mean PDT becoming much more widely available, which is very good news.'

In recent months, clinics offering photodynamic therapy for skin cancer have opened in Portsmouth and Manchester. 'It's a technique particularly valuable for removing lesions from the lower legs of elderly women and men's bald heads,' says Dr John Ashworth, a dermatologist at the Robius Lane Consulting Centre in Manchester.

'These are areas where the skin is tight and wound healing can be slow and difficult. Photodynamic therapy rarely leaves any scarring.'

Meanwhile, the diagnosis and treatment of lung cancer using light is currently being tested at the Mandi Rix clinic in a study run by Dr Jeremy George.

This focuses on the fluorescent spectroscopy being used to detect lung tumours earlier than they are normally spotted.

The hope is that early detection combined with PDT could make lung cancer much more survivable — currently only 7 per cent of lung cancer patients survive five years after diagnosis.

THE new scanners still need further tests on their reliability before they can be used to diagnose cancer on their own. This is done by seeing how well their results compare with the conclusion of a pathologist looking at a biopsy. But the results are already very promising.

And even now, the scanners look like being able to reduce the number of biopsies needed by some patients. For instance, patients who have a serious form of heartburn, known as 'acid reflux', often suffer from acid leaking from the top of the stomach.

This gradually damages the cells on the inside wall of the tube that runs up from the stomach to the throat (oesophagus), a condition known as Barrett's oesophagus, which is increasingly common.

To check that the damaged cells haven't become cancerous, these patients have regular biopsies. 'Sometimes you may have to do as many as 40 at a time,' says Stephen Bown, professor of Laser Medicine and Surgery at University College Hospital, London.

'That can be pretty unpleasant. With the new ESS we only need to do four much less invasive ones and we can give a much more accurate estimation of whether cancer has developed or not.'

■ *The Mandi Rix clinic was funded by the charity Killing Cancer. For further information on photodynamic therapy, see www.killingcancer.co.uk*