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THE FUTURE OF CANCER THERAPY

What I would like to talk about is the future of cancer care. It is a disease that affects us all. One in three of us currently gets the disease and it seems to be much more common today than ever before.

I have been a consultant in the National Health Service in the United Kingdom for nearly 40 years and when I started, we did not tell people they had cancer. The papers did not write about cancer. So there is no way there could be any discussion. Now it is quite the opposite. You see it everywhere. Every day in the papers there is a story. When pop stars, film stars get cancer, you read all about it. There are blogs, there are leaflets, there are websites – all sorts of places where you hear about it. But what is the future? Where is it all going? You hear lots of snippets in the media – what is true? What is just background noise and what is sort of the fake news of cancer, if you like?

Well, I like to think of four ways that cancer is moving forward, and the problem we have is that – whilst we can see these four little boxes of the future – we cannot predict for step changes, sudden changes that transform the way in which cancer is dealt with.

1. TECHNOLOGY BOX

The first box is the technology box. If you look at cancer diagnosis and cancer treatment, it has come a long way in my professional lifetime. Imaging

with Computer Tomography (CT) scans, Magnetic Resonance Imaging (MRI), Positron Emission Tomography (PET) scanning has revolutionised the way we can see where cancer is in a patient and also make the diagnosis of cancer.

But perhaps the greatest interest for the future is how we can treat the disease better. The standard three ways of treating cancer are surgery, radiotherapy and treatment with drugs, hormones and immunotherapy, loosely called chemotherapy.

The way things are advancing in surgery is robotics, there is no doubt, trying to harness the knowledge of the surgeon but use the skill of the robotic device to actually remove brain tumours, remove bladder tumours and so on. With radiotherapy again, it is all about information technology: connecting the image directly to the plan for radiotherapy. So radiotherapy does not involve the use of a human operator. The computer learns the rules where to draw the line between cancer and normal tissue to deliver an optimal field.

Radiotherapy and surgery are great and they are going forward very fast in terms of technology, but they are limited by the fact that, if the disease has spread from the primary site, it is not likely to be curable with either surgery or radiotherapy. That is the problem with cancer – it spreads; a process called metastasis – change of place. That is where drugs come in because drugs go all around the body and mop up any cancer cells that are spilled into other parts of the body: the lymph nodes, the blood vessels, the lungs, the liver, the brain, all these places can be reached by drugs. The hope for the future is very much that we will have the right drug for the right patient, personalising the way in which we treat cancer in a way we have never done before. If you compare the process with a broken car at the roadside – it is very difficult to make a diagnosis for us. The roadside patrolman comes along and has gadgets, diagnostic tools, that allow him to personalise the treatment he is going to give the car to get it better. It is exactly the same with cancer: can we work out which molecular cogs have gone wrong in the cancer cells and correct them by tinkering with them with a diagnostic tool – that is how it is likely to go. Thus, from a series of maybe 500 drugs you will get the drug selected, predicted to work best for you, giving you the minimal side effects and yet maximum benefit in terms potential to cure your cancer.

A lot has been said about immunotherapy recently. Fascinating area – and yes, it will change the way we treat cancer but it is only one of a whole series of interventions.

The technology box is fabulous and that will certainly go forward with remarkable advances over the next 10–20 years, on the background of the Genome Project which will help personalise treatment for us.

2. SOCIETY BOX

The second box is more complex, and that is society. Societies change. You have seen it change around you. It almost changes imperceptibly. Attitudes change. Social media come. All sorts of things are happening. Cancer is becoming more and more expensive to treat, so we come to a point at which you have to ask how much you would actually spend on your own life, if you could live another year, if there was an expensive treatment you had to have and you had to pay for it. That is the question that society is going to get to. If it is your own life, or someone you care for very much, you want to spend as much as you can on their life to keep them going. If it is for the general public, you are not so worried – it is not for a specific person. We have seen a lot of interesting crowd funding sites recently for cancer treatments that you cannot get either from insurers or from health services around the world. All healthcare systems are struggling to cope with the demand put on them. The Polish system, the British system, which are tax based, and then the various private insurance schemes that are available in Europe mainly, and North America – struggling to keep up with the onslaught of technology that is expensive; and the fact that people are living longer, and because cancer, the disease of the older age, there is no doubt that the older the population is, the more cancer will be there.

The technology box and the society box go hand-in-hand. As we go forward, attitudes are changing. We talk about it, we are open about it; information is out there – you can readily find information about the latest super drug for cancer or super treatment of protons with radiotherapy, with robotic surgery, so all can be found for society.

3. CANCER CARE

The third box is how we deliver cancer care. Now, traditionally, we have large cancer centres and then small cancer clinics and a sort of network. The future is about not having large cancer centres, because they are all in cities central location, they are all big teaching hospitals, and there is really no need for the bulk of the patients to actually come in regularly for treatment. It is much better to have neighbourhood cancer centres, which can deliver radiotherapy,

they can deliver chemotherapy, because cancer treatment is not a quick fix. You cannot go into a shiny new building, go there for even a day or two and come out cured. Cancer treatment takes months, sometimes years to complete – so it involves many visits. A woman with breast cancer in Britain today, from early diagnosis of breast cancer to the completion of treatment, which may take over two years, may need eighty to a hundred visits to a hospital. Much better if that can be a neighbourhood clinic, where you can park your car easily and deal with everything locally and quickly in the atmosphere of a Cottage Hospital, with people that get to know you over your journey – and that is the model all countries are trying to work for.

4. THE COSTS

I guess the fourth and last box of the future is how we are going to pay for cancer care and this is something none of us wants to talk about. We want to hide. We say: well, let us not worry about that – but we do have to worry about it. There are only three ways to pay for healthcare: tax based system such as the NHS, cash – you save up money or you pay up for insurance. There are only three ways and all countries use a balance of the three. In the UK it is predominantly NHS, predominately tax based system; in Europe it is predominantly an insurance system with a bit of a tax based system on top. So there are different models.

The problem with cancer is that as it gets more and more common as populations age – and it is great the population is aged, that means that healthcare is good, allowing people to live much longer – the problem is you get more cancer and more costs. Not only do you have the cost of treating the cancer, you also have the cost of treating all the other diseases people accumulate during their life – so the healthcare budget inevitably goes up as you get more successful at treating the cancer.

So how is it all going to pan out? We have got our four boxes of the future. The best scenario is that we get technology that is predictive of success; that we have drugs that are at reasonable cost, but we only use them when they are likely to work; we predict which patient needs which drug and so we get success in targeting the treatment to the right patient, which keeps the costs down.

Society agrees that we have to treat cancer. I think as we get older, one of the complicated areas are that you are less aggressive with older patients. Older people, say people over eighty, get compared with people at the age of fifty – they do not get the high-cost, more aggressive drugs. In the past that was because it was felt they would not have been able to tolerate the side effects. That

is probably not the case now because the drugs now are much better in terms of side effects.

We have some ethical issues about at what point you say: well, you know, you are now ninety or something, we are not going to spend a lot of money on you. At the moment we do not do that but I can feel that that is likely to come at some point in the future.

5. DISTRIBUTION OF SERVICES

The final issue is how we distribute cancer services to make them comfortable and convenient for the customer – the patient – and then finally how we pay for them. The one theme of the future with cancer is the patient in the centre of attention as a consumer of care. They are sort of in charge there, if you like, the customer that is trying to coordinate their own care.

Increasingly, I have to tell my patients that if you want to get the best cancer care, you can get it in nearly every European country, including Britain, you have to understand the system and how it works. You have to work out how not to beat the system as such but use the system to your greatest advantage. It strikes me all the time that the people, who get the best care in any health care system, tend to be more educated, not necessarily wealthier, more educated, and are more able to manipulate a complex structure such as our NHS. It is just like doing anything in life: if you want to get it done, you have to know how the system works to maximise your benefits.

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PRZYSZŁOŚĆ TERAPII LECZENIA NOWOTWORÓW

STRESZCZENIE

W artykule został poruszony temat przyszłości leczenia nowotworów oraz wyzwań, z którymi boryka się terapia nowotworowa. Autor przybliży czytelnikom, jak przez ostatnie lata wyglądała społeczna świadomość istnienia, profilaktyki i leczenia nowotworów oraz pokazuje możliwości, jakie może przynieść przyszłość. Analiza jest podzielona na cztery obszary: rozwój technologii, odbiór społeczny, państwowa opieka medyczna oraz koszty leczenia. W każdym z obszarów autor wskazuje szanse i zagrożenia.

Słowa kluczowe: nowotwory, terapia nowotworowa, świadomość społeczna