The best chance of being cured of cancer is through surgery by expert surgeons with a deep knowledge of oncology. Why then are the public, patients and policy makers so focused on drugs, and does it matter?

Mass media have an insatiable appetite for stories about cancer. No mystery in that. As readers, viewers and listeners, we never tire of the topic. We fear it. Many of us have been personally touched by it. We all want a cure.

What is somewhat more surprising is how rare it is for surgery to get a mention, given that top-quality surgery remains by far the single most important key to a cure.

The extent to which cancer surgery seems to be airbrushed out of media coverage is really quite striking.

A widely cited analysis of cancer research stories published between 1998 and 2006 on the BBC website – chosen by the researchers as "an ideal surrogate… for overall media impact" – found that stories about cancer drugs dominated, accounting for around 20% of all coverage (Br J Can 2008, 99:569–76)

Stories about research on any other modality of treatment were so few and far between that they didn't even get a mention in the report – the other major research topics, in order of frequency, were stories on lifestyle, genetics, food and drink, and work-related risk factors.

Riccardo Audisio, a consultant surgical oncologist at the University of Liverpool, and president of ESSO, the European Society of Surgical Oncologists, is deeply frustrated by the lack of attention his discipline gets within the public discourse around cancer. "Given that the vast majority of patients who are cured, are cured by surgery, and only around 5% or 6% by medical oncology, the media focus on cancer drugs is totally disproportionate," he says.

This matters, says Audisio. Not because surgeons are somehow entitled to have their contribution publicly recognised, but because the media influence public attitudes and policy agendas. Distorted media coverage feeds through to distorted priorities in individual and collective efforts to cure cancer.

Patients who go to extreme lengths to access a drug that may be of marginal value, he says, may die because they took the quality of their surgery for granted. Policy makers miss opportunities to improve outcomes because they don't take basic steps to protect patients from surgeons who are not up to the task. Funders pour resources into discovery of new medical treatments while efforts to push the boundaries of what surgery can achieve are held back by lack of basic financial support.

Why the obsession with drugs?

The media's obsession with stories about drugs tends to be attributed to the influence of the pharmaceutical industry, which has an interest in getting prominent and positive coverage of its products, and puts huge resources into press and PR.

The rhythm of clinical trials provides multiple opportunities for press releases at each new phase, and the regulatory stamp of approval turns a new drug into a news story regardless of the magnitude of true benefit. Press offices know how to package information in a way that best 'sells' the story, and they facilitate expert comments from researchers and patients, to make things as easy as possible for overstretched health journalists.

> “This ‘human tropism’ towards medicines is skewing the way society allocates its health resources”

While all of that is undoubtedly true, a fascinating article published in the journal of the European Molecular Biology Organization (EMBO reports, 2010, 11:572–577), suggests that there is something more fundamental behind our insatiable appetite for stories about drugs. It brought together a growing body of evidence to show that we are all hard-wired, through evolution, to seek medication when we are not feeling well, and that we share this trait with much of the animal world.

Significantly, it linked this trait to the placebo effect – the real biological effect (hence the evolutionary benefit) that has been demonstrated to arise simply from our seemingly irrational belief in the efficacy of an ingested medicine.

The paper carried a message to policy makers. This “human tropism” towards medicines, which played an evolutionary role in our survival, is now fuelling an irrational overvaluation of medicines, which is skewing the way society allocates its health resources. It called for public policies to “take into account the human factor” to ensure that decisions about allocating resources don’t “undervalue the contribution towards health and disease management of prevention and non-medicinal modalities, such as surgery.”

The dominant narrative

As president of the medical oncology society, ESMO, Fortunato Ciardiello represents a discipline on the winning side of this reported evolutionary bias. He is keen to stress that the optimism over some of the most recent therapies – particularly immunotherapies – is not all hype. “Some of these drugs are very important in changing the perspective of some tumours, although we still have to define the best way to use most of these drugs.”

He agrees, however, that when it comes to understanding cancer and how to tackle it, there is a worrying gap between reality and perceptions among the public, politicians and mass media – and not just about the contributions of different treatment modalities.

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“What we are missing is a public awareness that treating cancer is very complex and requires a high level of expertise among different professionals, working in good health organisations and networks, from the GP – who is often the first person to see the cancer – to different levels of diagnostic centres or hospitals, up to the so-called comprehensive cancer centres, from where eventually the patient is referred back to the family doctor.”

If any contribution to tackling cancer is being undervalued, argues Ciardiello, it is at the level of prevention and early diagnosis. “We should recognise why we have this epidemic of cancer. Most of it is changes in lifestyle, obesity, smoking… we need to do things to change these. Also screening, secondary prevention, defining when it is still possible to cure a patient who is not yet symptomatic. Are effective screening programmes really being done in all the tumours for which it is possible?”

When it comes to recognising the contribution surgery makes to cancer care in general, Ciardiello agrees that "tumour surgery is really a key factor for cure, and even long-term survival," and says the need for patients to be treated by expert surgeons must be one consideration in deciding where cancer treatment should be delivered.

The specific role for surgery in the management of different cancer indications is something that can only be decided on the basis of evidence, he says, which is where professional societies have a crucial role to play. "The only thing we know in oncology is through sound well-powered clinical trials that can answer specific questions. We in ESMO have been working on clinical practice guidelines for 20 years to help physicians make decisions in specific clinical situations. Whatever you may hope or imagine may be effective, this is not evidence based and could be a great waste of resources and harmful for the patient."

The view from cancer surger

The perspective outlined by Ciardiello is very much the dominant narrative in the cancer community, but seen from the standpoint of cancer surgery, things look rather different.

No-one argues with the imperative of evidence-based medicine, says Audisio, but the evidence generated is determined by what you look for. While billions in commercial and public/charitable money are invested in trying to demonstrate often minor benefits from new drugs, other treatment modalities scrabble to find funding to do research.

Based on our knowledge of what works, he says, that is not an efficient allocation of resources.

"We are discussing science and evidence here. Not science fiction. From the time I started in surgery 40 years ago, I've been told that basic science is about to get rid of the need for cancer surgery. It's never happened. I'm very happy to promote drug research, I enjoy staying abreast of the evolving science, but believe it or not, if you get a cancer now, it's surgery. So we need to put more money into making the surgery better."

Audisio says he and his co-principal investigator are currently funding from their own pockets an international study on a new technique that seeks to mitigate the cosmetic impact of mastectomies.

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The study is gathering evidence on the risks and benefits of a procedure that allows people to retain their own nipples, rather than having nipples tattooed on following breast reconstruction. The direct impact will be to improve survivors' quality of life, but Audisio believes it will also save lives – people with a familial history of BRCA-related cancers may be more likely to get tested and opt for a preventive mastectomy if the option comes with a lower cosmetic penalty.

He finds it frustrating when patients enrolled in this study proudly tell him how they've been raising funds "for cancer research", seemingly oblivious to the fact that the novel technique they have opted for is cancer research – and it is receiving no research funding. "People just assume the whole battle of cancer is finding new drugs."

Audisio points out that the big advances in cure over recent decades have come from surgery,

including a 20% increase in survival rates in rectal cancer and a 'breakthrough' – to coin a phrase – in patients with colorectal cancer that has metastasised to the liver, which used to be terminal, but can now be treated curatively in around one-third of patients.

The hidden toll of bad surgery

This lack of recognition for the contribution of cancer surgery does not only affect research. The real victims are the tens of thousands of patients across Europe who suffer from substandard cancer surgery because of what Audisio sees as the criminal negligence of governments and health systems.

Radiotherapists must learn about cancer. Medical oncologists clearly learn about cancer. But surgeons – the ones who are relied upon to deliver the curative treatment in most cases – do not have to know anything about cancer to be allowed to operate on a cancer patient. Audisio finds this quite astonishing, and believes that the public and patients would be equally shocked if they were aware of this.

If surgery was recognised as the primary treatment for cancer, he says, it would lead to much better education for surgeons. "My problem is not with the other cancer disciplines, it is with surgeons, because they are allowed to do everything. We don't have a system that can protect the community from the general surgeon."

But surely there are specialist units – for example in breast cancer – with a requirement to treat a minimum number of patients? True, says Audisio, but there is something critical missing.

"There is no philosophy or formal training. You have breast units, but there is no such thing as a breast cancer surgeon. They have created the oncoplastic breast surgeon [in the UK], where young lads are brought into plastic theatre and can do some reshaping. They can print a visiting card that says "oncoplastic surgeon", they can do implants, but they most often show limited oncological understanding."

"This is about more than being specialised in one site," says Audisio. "It's the idea of understanding that you can avoid surgery in this condition, or you need to be very aggressive with that condition, because, yes, we have a medical treatment, but it will never be as effective as good quality surgery.

"I think it is absolutely important to understand genetics, angiogenesis, chemoprevention, screening, follow up, detection, imaging, pathology, medical oncology and so on. Then you need to specialise in one cancer site or another. You need a multidisciplinary background, because of the cross-pollination."

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ESSO recently teamed up with the US Society of Surgical Oncology to develop a 'global curriculum', geared towards providing surgeons with just such a multidisciplinary background. Published in June, it offers "flexible and modular scaffolding that can be tailored by individual countries or regions to train surgical oncologists in a way that is appropriate for practice in their local environment".

Audisio believes that the single most important thing governments could do to improve outcomes would be to forbid surgeons to operate on cancer patients until they have mastered the key basics

about cancer and its management. Improving recognition among the public, patients and policy makers of the key importance of high-quality surgery will be key, he believes, to convincing governments to take action.

Getting political visibility in the Ukraine

Andrii Zhygulin is head of the only breast unit in the Ukraine that fully complies with the criteria and standards laid down by the European Society of Breast Cancer Specialists (EUSOMA). This is a country with one of the worst cancer survival rates in Europe, where the chances of surviving a diagnosis of cancer are roughly half those of someone living in Sweden.

Like Audisio, Zhygulin believes that poor quality surgery, along with late diagnosis, is largely responsible for that survival gap. He is on a mission to spread knowledge and expertise throughout the country, and would welcome more recognition and support for what he is trying to achieve.

Investing in the quality of cancer surgery is a no-brainer, according to Zhygulin. “Good surgery doesn’t need as much investment as drugs. In many cancers, better oncological surgery could save more lives without great cost, just through education and by the State ensuring that guidelines are being followed.”

Zhygulin’s breast unit is part of the LISOD Israeli Cancer Care Hospital – located just south of the capital city Kiev. Working with a small group of like-minded specialists, and with the support and backing of the management and the Israeli medical oncologists at the LISOD hospital, Zhygulin is doing what he can to address the quality agenda in his particular specialism, running courses on breast surgery and organising the country’s first breast cancer conference.

But this is a large country, with a dysfunctional public health system, he says. The doctors on the front line have low pay and low status: “They just want to do their job as quickly as possible and then go to another hospital to work some more to make enough money.”

Many of the top medical professors, meanwhile, speak no English, rely on Russian- and Ukrainian-language literature, and feel threatened by new procedures that they were not themselves trained in.

Zhygulin says the quality campaign that he and his colleagues have started has now spread to other cancer fields, and that discussions at the recent XIII Congress of Ukrainian Oncologists were remarkable for the frank recognition of just how bad things are, and doctors are starting to make real efforts to improve the situation.

He is aware, however, that turning things around will require serious political will and public investment. “For me it is very simple. Only good surgery can improve the outcomes. Who can do good surgery? Good surgeons. To be a good surgeon you need good training and education and good technologies. Who can give it to the surgeons? Only the system of healthcare and medical education. Who can do that? Only the government.”

The question is how that political will can be generated, given that in the Ukraine – as elsewhere – when it comes to cancer, public and policy attention is so heavily focused on the drug agenda?

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There are no easy answers, says Zhygulin, who describes public attitudes that reflect the EMBO paper suggestion that we are hard-wired to favour drugs. “People think surgery is just normal, and is done every time and everywhere and is boring. And some people are afraid to talk about it.

“When we are talking about new drugs, in contrast, it is something special, like hot news. In the Ukraine, we say ‘people are doctors,’ – they think they can understand everything in medicine. So if they hear about a new drug, this is much closer to the mind of the population.”

And, of course, people hear about new drugs all the time, because of the effort that goes in to promoting them. “No one does that for surgery.”

Getting guidelines visibility in Germany

Pompiliu Piso is head of general and visceral surgery at the Barmherzige Brüder teaching hospital of the University of Regensburg, in Germany – a country where many ‘all-rounder’ surgeons are still commonplace in most hospitals.

He highlights the efforts by the German Cancer Society to improve the quality of cancer care through a system of certification of specialist centres based on their performance and results.

A crucial element has been introducing greater transparency about surgical quality. “Nowadays, surgeons and their partners can at any time get information, for instance, about their rate of R0 resections, morbidity and mortality. This also enables benchmarking across centres, and shows the nationwide quality of care, such as rate of good TMEs for rectal cancer.”

Piso is now working with ESSO to promote the idea that surgeons who operate on cancer patients must specialise in particular sites and must have an educational grounding in cancer.

> “Surgeons have to take the initiative to be more present at interdisciplinary meetings and conferences”

He agrees with Audisio that the importance of the quality of surgery is under-recognised in cancer. He also strongly agrees on the need for surgeons to understand the basics of the cancer, and the potential contributions of all treatment modalities, to be able to participate fully in multidisciplinary team meetings. “This is the only way to define a tailored strategy for each patient,” he says.

But he also agrees with ESMO’s Ciardiello on the importance of working according to evidence-based guidelines, and says that surgeons need to increase their contribution within guideline committees, as this will also increase their visibility.

“Guidelines will reflect the importance of surgery if there are surgeons involved who can point out why surgery plays an important role for a certain therapeutic aspect,” says Piso. Their input can be particularly influential, he says, where the issue under discussion is controversial. “This, of course, assumes that surgeons are aware of important data in medical oncology, gastroenterology, pathology etc., including results of most recent published trials.”

While the final drafts of guidelines are written by consensus, the process of developing them, in Germany, is mainly coordinated by medical oncologists or gastroenterologists, he says.

Piso believes it would make more sense for surgeons to be the coordinators, “at least for solid gastrointestinal tumours that are mainly cured by surgery.”

It’s up to surgeons themselves, to make this happen, he argues. “Surgeons have to take the initiative to try to be more present at interdisciplinary meetings and conferences. We need to stress how important the quality of surgery is, and to show that surgeons are willing to improve the quality of surgery.

“We have to get more involved in these major decisions. Being in the operating room is important, but being in the meetings and committees, and showing the work we do and our results to the medical – and not only medical – community, is also important.”

Ensuring all cancer surgeons get specific training in surgical oncology could be an important step towards this goal. This will help ensure that surgical oncologists not only fully grasp the importance of a multidisciplinary approach, but have the detailed knowledge they need to play a key role in discussions on developing guidelines and applying them to individual patients.