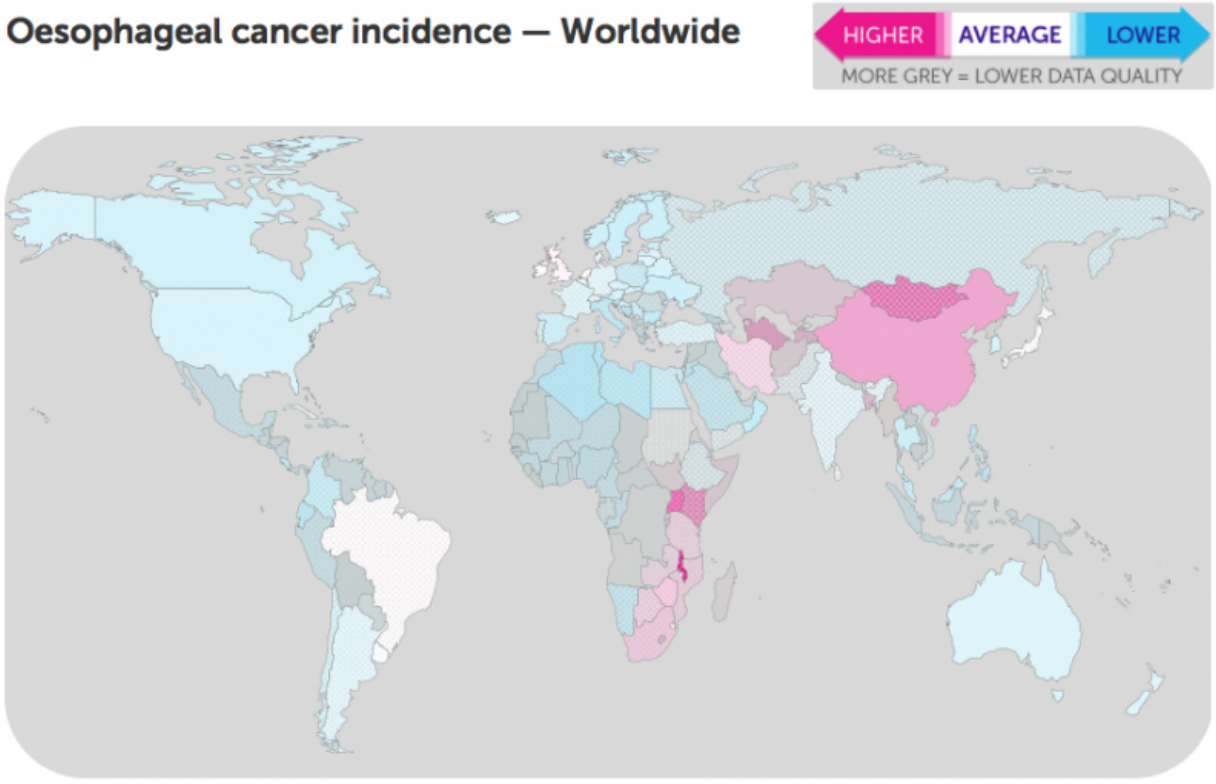
How we're building a community to beat oesophageal cancer

August 31 2015, by Stephanie Mcclellan



"I am the face behind your pipettes."

These were the words that filled a room of world-leading scientists as Jackie Beaumont, an oesophageal cancer survivor, opened our first ever

international conference for oesophageal cancer in Oxford.

You could hear a pin drop as she described her diagnosis and experience with cancer.

For the scientists working on the basic biology of the disease – who rarely meet oesophageal cancer patients – the message was strong: there are faces, lives and families behind the work that they do.

Jackie told us about how her life came to a screeching halt when she was diagnosed with, and treated for, oesophageal cancer almost a decade ago. She has subsequently become an advocate for the disease.

"I applaud scientists and I want to emphasise how hugely significant their work is," explained Jackie.

Oesophageal cancer is a growing problem: rates continue to rise, and it's now the sixth most common cause of cancer death in the UK.

But despite this, progress in improving treatment has lagged behind, so survival remains stubbornly low.

The aim of the conference, held earlier this month, was to bring together the world's leading oesophageal cancer experts for the first time. And by getting everyone in one room, our hope was to invigorate research ideas and stimulate progress in understanding and treating the disease.

The event included talks from biologists, geneticists, immunologists, and clinicians. Here's a summary of what they said.

Who's at risk?

Oesophageal cancer occurs in two different forms.

Oesophageal squamous cell carcinoma starts in the skin lining the oesophagus, whereas adenocarcinoma starts in the gland cells – where mucus that lines the oesophagus is produced.

The conference kicked off with a global tour of the disease – talking about why and where the different forms of the disease occur globally.

Dr Sanford Dawsey, from the National Cancer Institute, walked us through the disease's tremendous geographical variation. It was a strong reminder that almost nine out of 10 cases are preventable, and strongly linked to varying lifestyle factors.

Squamous cell carcinomas accounts for eight in 10 (80 per cent) oesophageal cancers worldwide, with half of the cases occurring in China. The main risk factors include smoking and heavy alcohol consumption, but when you look at high risk areas – which tend to be mainly in the developing world, it's clear that these can't account for all of the cases.

Dr Dawsey explained that other risk factors need to be taken into account to help solve this puzzle. His research suggests that other factors, like poor oral health, drinking extremely hot liquids, exposure to livestock, cooking indoors, exposure to industrial areas, and drinking yerba mate (a type of tea popular in South America) could all contribute to the rising rates.

But for countries like Kenya, that have high rates of oesophageal cancer, and many young people being diagnosed, there are still a lot of unanswered questions, and more research to do to find out why rates are so high.

Whatever the cause, squamous cell cancers are clearly aburning important health issue in these regions.

But in the developed world we're seeing a different trend – a significant rise in oesophageal adenocarcinoma, caused by risk factors like obesity and smoking, and in people with a condition called 'Barrett's oesophagus'.

People with Barrett's oesophagus are at a higher risk of developing oesophageal cancer. The condition is commonly triggered by persistent, long-term acid reflux, causing the cells that line the food pipe to become abnormal. And in some cases these cells may develop into cancer.

Dr Thomas L Vaughan, from the Fred Hutchinson Cancer Centre in the US, outlined his research uncovering the molecules and processes at play in this cellular progression.

In fact, research homing in on the crucial molecular steps that trigger this transition – and using this knowledge to transform care – was a key theme running throughout the conference.

Spotting oesophageal cancer we can treat

One of the reasons oesophageal cancer takes so many lives is because it's often diagnosed at a late stage, when it's much more difficult to treat.

The next session focused on how we could help diagnose more cases the disease earlier.

Dr Rebecca Fitzgerald – one of our scientists at the University of Cambridge – presented the latest on the development of a new test called Cytosponge (or the 'sponge-on-a-string'), which could become an alternative to endoscopy testing.

We've blogged about the device before, which offers a simpler way to detect and monitor people with Barrett's oesophagus – hopefully picking

any changes that look like cancer as early as possible. Rebecca presented some promising early results that have already emerged from clinical trials, so this is an area to keep an eye on.

On the cellular level

Next, all ears perked as we heard from one of the biggest names in cancer research, Sir David Lane, from the Ludwig Institute for Cancer Research. Back in the 1970s, his Cancer Research UK-funded team first discovered a crucial protein in all our cells called p53 – aka 'the guardian of the genome'.

This discovery revolutionised understanding of how cells grow and divide, and why faults in this system can lead to cancer.

In half of all cancers, not only oesophageal, p53 is damaged or inactive. In his talk Sir Lane talked about how faults in p53 are different to when cells lose the protein altogether. This led us to the big question: how can we use this knowledge to potentially treat cancer in the future?

And that's where the next speaker, Dr Ester Hammond's research came in. She looks at how cells can overcome the loss of p53.

In p53's absence, another 'back-up' protein called ATR kinase helps cells survive by repairing DNA and proteins in the cell. Dr Hammond's work looks at making cells more sensitive to radiotherapy by specifically targeting ATR kinase – effectively knocking out the back-up system the cancer cells rely on.

This research is a still at an early stage, but piecing together these smaller bits of lab-based evidence mark the crucial first steps towards finding new ways to tackle oesophageal cancer.

But what about the treatments we already have?

Treating the disease

While the development of new oesophageal cancer treatments has been slower than for other types of cancer, the conference indicated that progress is starting to head in the right direction.

Several potential new treatment opportunities were discussed, ranging from advances in radiotherapy, developing more personalised treatments, enhancing the effectiveness of drugs, as well as new surgery techniques.

Professor Daniel Hochhauser, one of our scientists at the University College London Hospital, gave a talk titled 'Is chemotherapy obsolete in an age of personalised treatment?'

He pointed out that, although traditional methods may be taking more of a backseat for certain other cancer types, chemotherapy is still a hugely important treatment option for oesophageal cancer patients.

Here he talked about how we can make chemotherapy more effective. His research is looking to uncover patients' specific genetic faults, and studying how we could combine this information with drugs that stop the cancer from escaping the effect of chemotherapy.

Raising the profile

The talk of treatments brings things squarely back to patients. And something made clear at the conference was that there is also a need to keep patients informed about what, in many cases, is an unknown disease.

Jackie explained that, when she was diagnosed, she didn't even know how to spell 'oesophageal'. And she believes the disease doesn't have the degree of awareness that other cancer types have.

She found that when she was diagnosed there was nowhere to turn to for support.

Jackie now runs a small charity, providing support for oesophageal cancer patients and their families.

She explains that cancer "isn't just about cancer" – it's the year you take out of work; it's the expense of replacing the clothes that don't fit anymore – and the toll that it takes on your family.

The conference was an important step to raise the profile one of the least studied and deadliest cancers. We hope this can become the flagship event, to bring together the international community in a united front.

And ultimately, we hope this will help ensure that more people like Jackie are here to share their stories.

Provided by Cancer Research UK