Personalised medicine: a note of caution

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Tailoring a patient's treatment to the particular biology of their cancer holds out the enticing prospect of avoiding over-treatment and reducing unnecessary toxicity – patients and cash-strapped health systems both stand to benefit. But delivering the right option for the right patient at the right time takes more than having the right biomarkers. And success in developing predictive biomarkers and targeted drugs has so far been modest when compared to the time, money and effort invested.

All of which gives cause for concern that so many people are jumping on the 'personalised medicines' bandwagon and are pushing national and European policy makers to make this a priority.

The problem lies not with personalised medicine *per se*. Medicine has always been about tailoring treatment and care to a patient's particular disease, age, comorbidities and preferences. The problem is that when the term 'personalised medicine' is used today, the focus is on one aspect of tailored cancer treatment – the use of targeted drugs and predictive biomarkers.

We know that translating scientific know-how into clinical reality is a highly uncertain business. History is littered with scientific failures that once appeared highly promising but ended up on the scrap heap. So far only a minority of cancer patients have derived significant benefit from targeted drugs, and that is not likely to change much in the immediate future. Arguing in favour of putting all our eggs in the 'personalised medicine' basket is therefore a flawed strategy that risks creating unrealistic public expectations.

It also takes the focus away from addressing obstacles to delivering personalised care that we do know how to overcome. Much more public funding is needed to conduct the optimisation studies that can show how best to use the the therapies we already have. Then there is the question of delivering personalised cancer care in everyday practice. Urgent action is required to improve cancer services, so every patient receives the attention of the right mix of specialists, to plan and deliver care tailored to their needs.

And finally, while we certainly need to vigorously pursue the potential for developing therapies designed using our knowledge of cancer genetics, the current heavy focus on drugs is too narrow. What about the potential for more precise tailoring of surgical and radiotherapy strategies, which currently account for only a tiny fraction of research into personalised therapies?

We need to be careful about the messages we send out. The biggest potential for improving cancer outcomes over the coming years lies in redesigning health systems to give all patients, regardless of cancer type, access to high-quality treatment and care from a multidisciplinary team of specialists. If we call for policy makers to focus instead on a scientific potential that might never reach the mainstream, we risk giving them a green light to shirk their duty to do what they must do to improve the delivery of cancer services. CW