Cancer drug database may protect patients

Online source lists side effects in using cancer drugs with other types

By Poon Chian Hui

SINGAPORE researchers have created the world’s first online database that lists combinations of cancer drugs – in a move that could help protect patients from harmful side effects.

Doctors and pharmacists can use it to help make sure the medication they give patients will not interfere with other medicines they are already taking – including herbal remedies.

For example, they could run a search on the database before prescribing something new to a person who already takes other drugs. It will then tell them if the patient could suffer ill effects, such as nerve damage, from using both at once.

The database, called OncoRx, was developed by the pharmacy department of the National University of Singapore. A mobile version for smartphones has also been completed, and a paper on the technology was recently published in an international research journal.

The team is now looking into ways to commercialise the database, and make it available to hospitals, clinics and pharmacies in Singapore and around the world. OncoRx currently contains 250 cancer drug courses and 217 individual medicines for treating other conditions.

These include alternative medicines such as traditional Chinese medicine, which is available over the counter here.

In fact, more than half of the patients at the National Cancer Centre Singapore take alternative medicine, according to a study of about 400 people by the same research team in 2009. Two-thirds do so without checking if the alternative drug will be safe for them to use, and only 54 per cent tell their doctors.

Other non-cancer drugs on the database include those used to control epileptic seizures and treat mental conditions. Clinicians tend to have a lot of problems with these types of medicine because they may clash with cancer medication, said lead investigator Alexandre Chan.

Although there are other databases containing both cancer and non-cancer medicine, they do not examine the safety of cancer drug courses. Not all of these platforms are user-friendly, said Assistant Professor Chan. “The scary part is, some are also very unreliable.”

Prof Chan said the new database is timely as people are taking more drugs at once. An elderly cancer patient, for instance, takes about six different types of medicine. Older people often take more than one drug type due to multiple health problems such as high blood pressure, diabetes and heart disease. But doing so can place them at risk of adverse effects.

Prof Chan explained that some drugs may stop certain types of medication from working properly. Others can disrupt the way a particular drug acts in the body – for example slowing the rate at which it is absorbed and leaving it hanging around in the system longer than it should. When this happens, the patient may experience greater side effects than normal, said Prof Chan.

More serious health risks include damage to the nerves and kidneys.

Cancer patients are especially vulnerable as the drugs that fight the disease – such as those used in chemotherapy – are highly potent and toxic.

The team used OncoRx to analyse the drug courses of 900 cancer patients in 2009 and last year. They found that about 20 per cent were on drugs that potentially interfere with one another.

But Prof Chan pointed out that the new database does not solve all problems. If patients choose not to disclose the other medicines they are taking on the side, proper checks cannot be done.

“Some patients don’t like to tell the doctor what other drugs they are taking, like traditional Chinese medicine,” he added. “A lot of education – for both patients and health-care professionals – still needs to be done.”