

Genomic sequence reveals new treatment options for pancreatic cancer

February 27 2015, by Sally-Ann Jones



An international project assisted by researchers from The University of Western Australia has offered new hope to patients with pancreatic cancer.

While many advances have been made in other types of cancer, [pancreatic cancer](#) remains largely incurable, with survival rates less than five per cent five years after diagnosis.

The Australian Pancreatic Genome Initiative (APGI), funded by the NHMRC and led by a team at the Garvan Institute and Kinghorn Cancer Centre in Sydney, has led an international program aimed at changing this.

Dr Nicola Waddell, of the Queensland Centre for Medical Genomics at The University of Queensland, led the latest step in the initiative, a study which examined the variations in the genome present in 100 pancreatic adenocarcinomas - the type most frequently diagnosed.

The research allowed those cancers to be further divided into four categories, one of which demonstrated high amounts of genomic instability - a trait which ironically may also render them susceptible to treatments which work through DNA repair mechanisms.

Several of the cancers were also found to have mutations amenable to treatment with drugs used for other cancers, and not at present for pancreatic cancer. In addition, two novel gene mutations were observed which may offer leads for new approaches to treatment.

Adjunct Associate Professor Nikolajs Zeps, of UWA's School of Surgery and St John of God Subiaco Hospital, oversaw the collection of pancreatic cancer samples from patients diagnosed in WA. He said the paper was a great example of the benefits of strong collaborations within WA and with colleagues nationally.

"This project depends upon getting access to high quality specimens that are ethically obtained," Dr Zeps said. "Working closely with our colleagues in surgery, pathology and medical oncology, we have not only supported this project but have established pathways that will benefit people who suffer from other cancers. This kind of teamwork exemplifies the way cancer research is now done.

"The work of Nicola Waddell and her colleagues is particularly important because it has for the first time revealed clear markers that will be useful in selecting more appropriate therapies for patients with pancreatic cancer. The next steps will be to use these genetic signatures as the basis for new clinical trials aimed at alleviating the suffering from

this cancer."

He said the study was a good illustration of the power of biobanks linked to genomic sequencing.

"Further investment in these activities in WA will enable us to continue making similar exciting advances in the future."

More information: "Whole genomes redefine the mutational landscape of pancreatic cancer." *Nature* 518, 495–501 (26 February 2015) [DOI: 10.1038/nature14169](https://doi.org/10.1038/nature14169)

Provided by University of Western Australia

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