Sir Charles Hercus Health Research Fellow Dr Rebecca Roberts is investigating the genes that contribute to inflammatory bowel disease (IBD) susceptibility and the genes which influence how patients respond to drugs used to control the disease.

IBD is a debilitating disease which is thought to be caused by a combination of genetic and environmental factors. There is no cure for IBD and patients require lifelong medication to manage its effects.

"IBD manifests itself as either Crohn’s disease (CD) or ulcerative colitis (UC) each of which differs in the way the inflammation behaves and its location.

The peak age of onset for CD and UC is around 25 years and 30 years of age, respectively.

IBD has a very profound effect on peoples’ quality of life with symptoms that include abdominal pain, weight loss, diarrhoea, constipation, lesions, and in some instances complications outside the gastrointestinal tract, including eye inflammation, arthritis, and osteoporosis,” Dr Roberts says.

IBD is commonly treated with immunosuppressants but Dr Roberts says the effectiveness of these can diminish over time and many patients are intolerant or resistant to standard immunosuppressant therapy.

Furthermore, many of the newer medications are very expensive and the long-term safety profiles of these drugs have yet to be established.

Major surgery can also be used to treat IBD by removing inflamed bowel; however in CD the inflammation will tend to reoccur in another part of the bowel after surgery.

Dr Roberts says researchers have been narrowing down the genes implicated in IBD for a long time and in the last year or so they have made inroads into discovering which genes alter people’s risk.

One of Dr Roberts’ aims is to identify and validate novel, genetic susceptibility factors for IBD from genome-wide scans performed on CD and UC cohorts. The second aim is to identify genetic variability that reliably predicts response to the immunosuppressant used to manage IBD.

New Zealand has one of the highest rates of IBD in the world and the incidence of this disease is increasing.

The disease is most common in Caucasians, but Dr Roberts says people from other races who immigrate to countries like New Zealand start to see their risk increase.

No one has been able to pin down the environmental triggers, but smoking is believed to be predictive of UC and increase the risk of CD and breastfeeding is thought to reduce risk of getting IBD.

“There are a lot of conflicting theories about the environmental causes of IBD,” Dr Roberts says.

Dr Roberts hopes that ultimately her research into IBD will help improve patient care.

This research is funded by the Health Research Council of New Zealand.

Key words:
- IBD, genetic and environmental factors, Crohn’s disease, ulcerative colitis

Aims of this research:
- To improve patient care by identifying genes that contribute to IBD and those that influence response to treatment