

My name is Geoff Butcher and I've had Parkinson's disease now for about 13 years. One of the animals most used in research in Parkinson is Marmosets. We are now going to go into an animal facility and talk to a scientist. The Marmosets here were all bred in captivity and following treatment they exhibit the symptoms of Parkinson's disease. We've not shown the scientist because of the small risk he faces from those opposed to the use of animals in research.

What is it you do here and why are you using Marmosets?

What we are doing is we are looking at Parkinson's disease. We use a drug called MPTP to create the Parkinson's type of lesion. Some drug abusers in California in the 1980's were using a synthetic heroin and a number of young adults were turning up at clinics with all the symptoms of Parkinson's disease. The drug users had taken heroin contaminated with a chemical called MPTP and it was the MPTP that had created the brain damage that led to the Parkinson like symptoms. The realization that MPTP could cause such specific damage to the brain has led to it being used as a research tool.

Did those young people recover or were they treated?

They had to be treated, they were responsive to L DOPO and they remained in that state.

And what you are hoping to do in the actual research here is what, to develop new drugs?

We are looking to develop new drugs. There are some very good drugs for the treatment of Parkinson disease but most of them have drawbacks when the patients develop adverse side effects.

As the Parkinson's disease progresses, people taking dopamine boosting drugs for a long time can experience distressing side effects. Some other side effects of drugs for Parkinson's disease can be compulsive behaviours. Although only a small number of people experience this, it can leave a devastating impact on the person affected and on those around them.

What sort of symptoms do they show?

They show all the classic symptoms associated with Parkinson disease, they have very reduced locomotion activity, they tend to have quite rigid posture.

And do they eventually die of it?

With the MPTP lesion, it's not progressive. This is the major difference to the situation in man. It doesn't get any worse. Doesn't get any worse, no. They actually seem quite happy.

They do. We think that it is a very good model because the animals are actually able to maintain themselves without any drug treatment.

Giving MPTP to Marmosets is classed in law as a severe procedure. The animals are initially quite sick and have to be nursed by the careers. They have to be hand fed and groomed but after they recover they are able to live independently again.

So these little guys can actually manage quite well. They feed, eat and look after themselves but have enough motor deficits for us to be able to measure the increases when we treat them.

In fact, they don't suffer anywhere near as much as humans. That's very true.

You give them some drugs to see or test new compounds to see if...

The animals are very responsive to dopaminergic drugs and this is obviously the main treatment for Parkinson's disease. Also we are looking at drugs that can be given in combination with dopamine agonists or L DOPO to reduce the side effects.

What do you think is going to be the end product of your research, if there is ever an end?

I think we will always continue with improving the therapeutic strategies. There has been a great concentration on looking at movement but Parkinson disease is a much bigger syndrome than that. It isn't just about movement. There are a lot of other symptoms that need to be addressed.

I know some of those and would you go from these animals to monkeys or from here to humans.

If we see good results in the Marmosets this is a primate model that is sufficient for things to be taken forward into man. Certainly a lot of the research that we have done in the past, particularly with drugs like COMT inhibitors Entacapone, Tolcapone, these were almost taking directly into the clinic on findings that we presented.

Then you are straight into small numbers and humans trials. I will be volunteering. That's excellent. You have got 1 volunteer. Great.

One of the things that was impressive was the cleanliness and the care of the animals in the laboratory. The animals are obviously very happy and content, easily handled, not at all frightened. I hope that they will soon be able to prevent the progression of the disease and for people like me that would be an enormous encouragement.