Summary of Results for Laypersons

Astellas is grateful to the patients who took part in this clinical study. Thank you.

What was the Study Called?

A Randomized, Double-Blind, Placebo-Control, Multicenter Clinical Trial evaluating the Efficacy and Safety of Tacrolimus Capsules in the Treatment of Myasthenia Gravis Patients with Inadequate Response to Glucocorticoid Therapy

Why was this Study Needed?

Myasthenia gravis (MG) is a disease that causes weakness in the skeletal muscles. Those are the muscles your body uses for movement. It happens when the immune system makes antibodies that block the communication between nerve cells and muscles. The muscle weakness leads to symptoms such as double vision, drooping eyelids and difficulties with speech, chewing, swallowing and breathing. A combination of medicines is usually used to treat MG. There are medicines that can help improve messaging from nerves to muscles and make muscles stronger (cholinesterase inhibitors). And there are medicines that reduce the strength of the immune system and keep the body from making so many abnormal antibodies (such as glucocorticoids and azathioprine). But glucocorticoids (such as prednisone) do not improve the MG symptoms of some patients. Therefore, there was a need to study new treatments for those patients. Tacrolimus is an experimental medicine for MG that reduces the strength of the immune system.

This study was conducted in Chinese patients who had MG. They had taken glucocorticoids in the past, but those did not improve their MG symptoms. The patients in this study took tacrolimus or placebo. (The section below describes what placebo capsules are.) This study looked at the Quantitative Myasthenia Gravis (QMG) score, which measures how severe the patient's MG symptoms are. A higher QMG score means worse MG symptoms. This study looked if the QMG score was lower (MG symptoms improved) after patients took study medicine for 6 months. The study compared the QMG scores of patients who took tacrolimus and those who took placebo. It was also important to find out what unwanted effects these patients had from the study medicines.

The study started in March 2011 and ended in May 2014. When the study ended, the sponsor (Astellas) reviewed all the study information and created a report of the results. This is a summary of that report.

What Kind of Study was This and Who Took Part in it?

This was a "double-blinded" study. That means that the patients and the study doctors did not know who took which of the study medicines (tacrolimus or placebo). A "placebo" is a dummy treatment such as a tablet or capsule that looks like a medicine, but does not have any medicine in it. Using a placebo helps make study results fair and unbiased, because study doctors and patients cannot tell who is taking a placebo, and who is taking the test medicine.

This study included adult Chinese women and men aged 18 to 70 years old. Their doctor had determined that they had MG. Their QMG score was at least 7. They had taken glucocorticoids in the past, but those did not improve their MG symptoms.

During the study, the study doctor did a check-up of the patients at several study visits. At the first visit, patients were checked to see if they could be in the study. Patients who could be in the study were picked for a treatment (tacrolimus or placebo) by chance alone.

- Tacrolimus: Patients took tacrolimus capsules (3 mg) once a day for 6 months.
- Placebo: Patients took placebo capsules once a day for 6 months.

This study took place at 13 clinics in China. 83 patients were in the study and took at least 1 dose of study medicine.

	Number of Patients
Age Group	
Aged between 20 and 68 years	82
Sex	
Men	36
Women	46

What Were the Study Results?

This study looked if the QMG score was lower (MG symptoms improved) after patients took study medicine for 6 months. The study compared the QMG scores of patients who took tacrolimus and those who took placebo.

After 6 months, the mean (or average) change in the QMG score was -4.9 for patients who took tacrolimus; and was -3.3 for patients who took placebo. A statistical test showed that the difference was -1.7. This means that the MG symptoms improved more with tacrolimus than placebo. A statistical test showed that the difference was likely to be due to chance.

What Adverse Reactions did Patients Have?

A lot of research is needed to know whether a medicine causes a medical problem. So when new medicines are being studied researchers keep track of all medical problems that patients have while they are in the study. These medical problems are called “adverse events” and are recorded whether or not they might be caused by the treatment taken. An “adverse reaction” is any medical problem or “adverse event” that is judged by the study doctor to be possibly caused by a medicine or treatment used in the study.

The table below shows the most common adverse reactions experienced by patients who took at least 1 dose of study medicine in this study.

Adverse Reaction	Tacrolimus (out of 45 patients)	Placebo (out of 38 patients)
Any adverse reaction	33 (73.3%)	29 (76.3%)
Infection of the upper respiratory tract (nose, sinuses, throat, wind pipe and voice box)	9 (20.0%)	6 (15.8%)
Myasthenia gravis (a disease that causes weakness in the muscles your body uses for movement [skeletal muscles])	7 (15.6%)	6 (15.8%)
Common cold	6 (13.3%)	5 (13.2%)
Diabetes (a disease in which the blood sugar level is too high)	3 (6.7%)	0
Diarrhea	3 (6.7%)	6 (15.8%)
Urinary tract infection	3 (6.7%)	1 (2.6%)
Problems with sleeping	0	2 (5.3%)
Difficulty sleeping or falling asleep	0	2 (5.3%)
High blood pressure	0	5 (13.2%)
Increased blood level of lactate dehydrogenase	0	2 (5.3%)
Inflammation of the lining of the bronchial tubes, which carry air to and from the lungs	0	4 (10.5%)

An adverse reaction is considered “serious” when it is life-threatening, causes lasting problems or needs hospital care.

Nine patients (10.8%, or 9 out of 83 patients) experienced serious adverse reactions: 4 patients who took tacrolimus and 5 patients who took placebo.

Where Can I Learn More About This Study?

This document is a short summary of the main results from this study and reflects the information available as of September 2014. You can find this summary and more information about this study online at http://www.astellasclinicalstudyresults.com.

Please remember that researchers look at the results of many studies to find out how well medicines work and which adverse reactions they might cause. This summary only shows the results of this 1 study. If you have questions about tacrolimus, please discuss these with your doctor.

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