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 Phase 4, Double-Blind, Randomized, Placebo-Controlled, Parallel Group, Multi-Center, Study to Evaluate the Efficacy, Safety, and Tolerability of Mirabegron in Older Adult Subjects with Overactive Bladder (OAB). This is also known as the PILLAR study.

Why was this Study Needed?

Mirabegron (also known as YM178 and Betmiga®, Myrbetriq® and Betanis ®) is a prescription medicine for overactive bladder (OAB). There is information on the effect of mirabegron on OAB symptoms in patients in general. But there is less information on its effect on OAB symptoms in older patients. Therefore, there was a need to study mirabegron in older patients with OAB.

This study was conducted in patients 65 years or older with OAB. Patients took mirabegron or placebo. (The section below describes what placebo tablets are.) The study looked at the average number of times per 24 hours patients had to urinate. The study also looked at the average number of times per 24 hours patients were incontinent. This means that they were not able to control when to empty their bladder and they lost urine involuntarily. The study compared the changes after patients took study medicine (mirabegron or placebo) for 3 months. It was also important to find out what unwanted effects these patients had from the study medicines.

The study started in October 2014 and ended in January 2018. When the study ended, the sponsor of this study (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 (mirabegron 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 women and men aged 65 years or older with OAB. Their symptoms included having to empty the bladder more often than usual. And they could not control the emptying of the bladder and lost urine involuntarily. They had these symptoms for at least 3 months before the study started.

During the study, the study doctor did a check-up of the patients at several study visits. At visit 1, patients were checked to see if they could be in the study. Patients who could be in the study took placebo for 2 weeks. During the last 3 days, patients kept a diary of their

OAB symptoms. Next, the study doctor checked the diaries to see if the patients could remain in the study.

Patients who could remain in the study were picked for a treatment (mirabegron or placebo) by chance alone. Patients took study medicine for 3 months.

- Mirabegron: Patients took mirabegron tablets (25 mg) once a day. The study doctor could increase this dose to 50 mg once a day after 4 or 8 weeks.
- Placebo: Patients took placebo tablets once a day.

This study took place at 120 clinics in 2 countries. 1643 patients were in this study. After the diary check, 888 patients could remain in the study. Out of these patients, 887 patients took at least 1 dose of study medicine.

	Number of Patients	
	Mirabegron	**Placebo**
Age Group		
Aged less than 75 years	320	318
Aged 75 years or older	125	124
Sex		
Men	128	118
Women	317	324
Clinic Location		
Canada	60	53
The US	385	389

What Were the Study Results?

This study in older patients with OAB looked at the average number of times per 24 hours patients had to urinate. And the study looked at the average number of times per 24 hours patients were incontinent.

This study showed that after 3 months of treatment, patients had to urinate less frequently per 24 hours. Patients who took placebo had to urinate an average of 1.7 fewer times per 24 hours. It was an average of 2.3 fewer times per 24 hours for patients who took mirabegron. A statistical test showed that the difference was not likely to be due to chance.

This study showed that after 3 months of treatment, patients were incontinent fewer times per 24 hours. Patients who took placebo were incontinent an average of 1.45 fewer times per 24 hours. It was an average of 2.00 fewer times per 24 hours for patients who took mirabegron. A statistical test showed that the difference was not likely to be due to chance.

This study showed that the symptoms of OAB in older patients improved more with mirabegron than with placebo.

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	**Mirabegron (out of 445 patients)**	**Placebo (out of 442 patients)**
Any adverse reaction	84 (18.9%)	57 (12.9%)
Headache or head pain	18 (4.0%)	7 (1.6%)
Urinary tract infection caused by *Escherichia coli* bacteria	9 (2.0%)	7 (1.6%)
Fatigue or tiredness	7 (1.6)	10 (2.3%)
Dry mouth	6 (1.3%)	7 (1.6)
Nausea or the urge to vomit	6 (1.3%)	3 (0.7%)
Diarrhea	5 (1.1%)	1 (0.2)
High blood pressure	4 (0.9%)	4 (0.9%)
Dizziness (or sensation of lightheadedness, unsteadiness, or giddiness)	2 (0.4%)	6 (1.4%)

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

Two patients who took placebo (0.5%, or 2 out of 442) experienced serious adverse reactions in this study.

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 October 2018. 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. Your doctor may help you understand more about the results of this study.

Sponsor contact details:

Astellas Pharma Global Development
1 Astellas Way
Northbrook, IL 60062
USA