Summary of Results for Laypersons

What was the Study Called?

A Phase III, Randomized, Double-Blind, Parallel Group, Placebo Controlled, Multicenter Study to Assess the Efficacy and Safety of the Beta-3 Agonist Mirabegron (25 mg qd and 50 mg qd) in Subjects with Symptoms of Overactive Bladder. This is also known as the CAPRICORN study.

Why was this Study Needed?

People suffering from overactive bladder problems, with symptoms such as increased number of times they urinate and feeling quicker the need to urinate, with or without episodes of leaking before reaching the toilet may benefit from medicines. Medicines are already available, but some of them may cause unwanted effects and some do not work in all patients.

This study was done to find out how well mirabegron treats these bladder problems. Mirabegron is a prescription medicine used to treat the symptoms such as:

- Sudden need to urinate which is difficult to delay (called urinary urgency).
- Having to empty the bladder more often than usual (called increased urinary frequency).
- Not being able to control when to empty the bladder (called urgency incontinence).

The main question this study helped answer was if mirabegron (25 mg or 50 mg once daily) was better than a placebo to treat patients with these bladder problems. The study also helped answer if mirabegron was well tolerated. Also, it was important to find out what unwanted effects mirabegron might cause.

This study for mirabegron (also known by its brand names Betmiga®, Myrbetriq® and Betanis®) took place at 151 clinics in Europe and North America. The study took place from April 2009 to April 2010. 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 "blinded" study. In this study the patients and the researchers did not know who took which of the 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. In this study a placebo was given to patients once daily for 2 weeks at the beginning of the study. After this 2 week "run-in period" the patients took 1 of the following treatments:

- 25 mg of mirabegron once daily for up to 12 weeks
- 50 mg of mirabegron once daily for up to 12 weeks
- placebo once daily for up to 12 weeks

Patients were picked for each treatment by chance alone.

Both men and women took part in the study. They were all over 18 years old. They had bladder problems for at least 3 months before the study. Patients could not take part in this study if they had the following conditions:

- Leakage of urine under stress conditions (exercise, laughing).
- Catheters (tube for draining urine) inserted in their bladders.
- Stones in their bladder.
- Received nondrug treatment, including electro-stimulation therapy, for their bladder problems.
- Radiation therapy in the lower abdomen or cancer in the lower abdomen.
- Infections of the structures that carry urine.
- Severe high blood pressure (greater than or equal to 180 mmHg systolic and/or greater than or equal to 110 mmHg diastolic while sitting down).
- Kidney disease caused by diabetes.

During this study patients made 5 visits to the clinic and 1 follow-up telephone call or clinic visit. At first they were given a placebo to take for 2 weeks. Patients also kept a diary of their symptoms. At the end of the 2 weeks patients returned to the clinic. During this visit patients were selected to stay in the study if their diaries showed that during the previous 3 days:

- They were not able to control when to empty the bladder for on at least 3 occasions
- And they had urinated at least 8 times a day

A total of 2201 patients volunteered for the study. A total of 2030 patients received placebo during the run-in period. A total of 1305 patients received mirabegron or a placebo for up to 12 weeks in this study. Patients took 1 of the following treatments once daily:

- 432 patients took mirabegron 25 mg
- 440 patients took mirabegron 50 mg
- 433 patients took placebo

	Number (out of 1305 patients)
Age Group	
Aged between 18 and 64 years	823
Aged 65 years and older	482
Men	408
Women	897
EU Countries	593
Outside EU	712

What Were the Study Results?

The results of the study showed that 25 mg or 50 mg of mirabegron taken once daily by patients was better than no medicine at controlling their bladder problem. However, the 50 mg dose worked better than the 25 mg dose. The study also showed that 25 mg and 50 mg of mirabegron taken once daily by patients was well tolerated.

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.

More patients in the mirabegron groups experienced high blood pressure compared to the placebo group. More patients in the placebo group experienced headache compared to the mirabegron groups. The table below shows the most common adverse reactions experienced by patients who received at least 1 dose of study medicine.

		Number of Mirabegron Patients		
Adverse Reaction	**Placebo (out of 433 patients)**	**25 mg (out of 432 patients)**	**50 mg (out of 440 patients)**	**Total (out of 872 patients)**
High blood pressure	23	30	31	61
Headache or head pain	9	4	4	8

An adverse reaction is considered "serious" when it is life-threatening, causes lasting problems, or needs hospital care. Some patients had serious adverse reactions: 3 patients in the mirabegron 25 mg group, 1 patient in the mirabegron 50 mg group and 2 patients in the placebo group. No patients died during the study.

Where Can I Learn More About This Study?

Astellas may perform additional studies to better understand mirabegron.

This summary of the clinical study results is available 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. If you have questions about mirabegron, please discuss these with your doctor.

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