Summary of Results for Laypersons

What was the Study Called?

A Double-Blind, Randomized, Parallel Group, Multi-Centre Study to Evaluate the Efficacy and Safety of Mirabegron Compared to Solifenacin in Subjects with Overactive Bladder (OAB) Treated with Antimuscarinics and Dissatisfied Due to Lack of Efficacy. This study is also known as the BEYOND 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 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 (50 mg once daily) was just as good as solifenacin (5 mg once daily) to treat patients with these bladder problems. Patients were entered into the study if they were unhappy with the results of previous treatment with medications similar to solifenacin. If patients had previously taken solifenacin they were not entered into the study. The study 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 232 clinics in Europe, Canada, and the Middle East. The study took place from June 2012 to April 2013. 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 solifenacin).

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 were given 1 of the following treatments:

- 50 mg of mirabegron once daily for up to 12 weeks
- 5 mg of solifenacin 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. They also were or and had taken medicine called antimuscarinics. Antimuscarinics are commonly used to treat overactive bladder. This group of drugs block certain nerve activity. 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 or a significant obstruction of the bladder outlet.
- 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.
- Bladder issues cause by a nerve issue.
- Moderate or severe liver issues.
- Significant cardiac abnormality as seen on an electrocardiogram (ECG).
- Currently had cancer or had a history of cancer (except for some types of skin cancer).
- Patient's last medicine to treat their bladder problem was solifenacin.
- Treatment with botox-like injection(s) into the bladder within the last 9 months

During this study patients made 5 visits to the clinic. 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 at least 3 times
- And they had urinated at least 8 times a day

A total of 2586 patients volunteered for the study. A total of 2487 patients received placebo during the run-in period. A total of 1870 patients received mirabegron or solifenacin for up to 12 weeks. Patients took 1 of the following treatments once per day:

- 936 patients took mirabegron 50 mg
- 934 patients took solifenacin 5 mg

	Number (out of 1870 patients)
Age Group	
Aged between 18 and 64 years	1241
Aged 65 years and older	629
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	Number (out of 1870 patients)
Men	449
Women	1421
EU Countries	1473
Outside EU	397

What Were the Study Results?

The results of the study did not show that 50 mg of mirabegron daily was just as good as 5 mg of solifenacin daily. However, the study also did not show that solifenacin was better than mirabegron. Patients in both groups showed improvement in their bladder problem symptoms. The study also showed that 50 mg of mirabegron taken once daily 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 solifenacin 5 mg group experienced dry mouth compared to the mirabegron 50 mg group. The table below shows the most common adverse reactions experienced by patients taking part in this study.

Adverse Reaction	Mirabegron 50 mg (out of 936 patients)	Solifenacin 5 mg (out of 934 patients)	Total (out of 1870 patients)
Dry mouth	29	52	81
Constipation	16	21	37

An adverse reaction is considered "serious" when it is life-threatening, causes lasting problems, or needs hospital care. Some patients had serious adverse reactions: 4 patients in the mirabegron 50 mg group and 4 patients in the solifenacin 5 mg 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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