Summary of Results for Laypersons

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

What was the Study Called?

A Phase 1, Open-Label Study of the Safety and Pharmacokinetics of Repeated-Dose Micafungin (FK463) in Children (2 - 5 Years and 6 - 11 Years) and Adolescents (12 – 16 Years) with Esophageal Candidiasis or Other Invasive Candidiasis

Why was this Study Needed?

Children with a weakened immune system are at risk for an infection caused by an overgrowth of the *Candida* yeast. Esophageal candidiasis is when this infection is in the tube that goes from mouth to stomach through which food passes ("esophagus"). Invasive candidiasis is when this infection has spread to other parts of the body. Micafungin (also known as FK463 and Mycamine®) is a prescription medicine for the treatment of *Candida* infections. It is given through a tube inserted into a vein (intravenous infusion). At the time of this study, micafungin was approved for use in adults to treat their esophageal candidiasis. It was not yet approved for use in children to treat that same infection. Therefore, there was a need to study micafungin in children with esophageal or invasive candidiasis.

This was a phase 1 study. These studies look at what the body does to the study medicine and what the study medicine does to the body. Phase 1 studies often involve healthy participants. These studies may also involve patients with certain health conditions. This study was conducted in children with esophageal or invasive candidiasis. The main question this study helped answer was how micafungin was taken up in the body.

It was also important to find out what unwanted effects the children had from micafungin.

The study started in October 2007 and ended in September 2011. When the study ended, 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 an "open-label" study. This means that the parents of each child and the study doctors knew which study medicine that child received (micafungin).

This study included children and adolescents aged 2 through 16 years. They had esophageal or invasive candidiasis. Or they had a likely *Candida* infection. They were in a stable condition. The study doctor thought that they would be able to complete the study.

During the study, the study doctor did a check-up of the children at several study visits. At the first visit, children were checked to see if they could be in the study. Children who could be in the study received micafungin via intravenous infusion. Children who weighed less than 25 kg received 4.5 mg/kg micafungin each day. (This means that each day, 4.5 mg of micafungin was given for every kg of body weight.) Heavier children received 3.0 mg/kg micafungin each day.

The children received study medicine for 10 to 14 days.

This study took place at 11 clinics in the US and South Africa. 84 children were in the study. Out of these children, 78 children received at least 1 dose of study medicine.

	Number of Children
Age Group	
Aged between 2 and 5 years (young children)	32
Aged between 6 and 11 years (older children)	33
Aged between 12 and 16 years (adolescents)	13
Sex	
Boys	37
Girls	41
Clinic Location	
Outside European Union	78
South Africa	38
The US	40

What Were the Study Results?

This study in children with esophageal or invasive candidiasis helped determine how micafungin was taken up in the body. The dose of micafungin was 3.0 or 4.5 mg/kg each day. All children received micafungin for 10 to 14 days. Next, the total and peak levels of micafungin in the blood were measured.

The average total level of micafungin in the blood was comparable between the young children in the 4.5 mg/kg group and the older children in the 3 mg/kg group. But their total levels were lower than those in the older children and the adolescent in the 4.5 mg/kg group. (There was 1 adolescent in the 4.5 mg/kg group.)

The average peak level of micafungin in the blood was similar in all children in the 2 dose groups and the adolescents in the 3.0 mg/kg group. The exception was the adolescent in the 4.5 mg/kg group. The adolescent had a higher peak level than the other children in that group.

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 children who received at least 1 dose of study medicine in this study.

Adverse Reaction	Micafungin (out of 78 children)
Any adverse reaction	28 (35.9%)
Reaction that can occur during or following infusion of the drug. The reaction may include fever, chills, rash, low blood pressure, and difficulty breathing.	9 (11.5%)
Pyrexia	7 (9.0%)
Decreased blood level of magnesium	5 (6.4%)
Decreased blood level of potassium	3 (3.8%)
Vomiting	3 (3.8%)
Chills and shivering	2 (2.6%)
Decreased blood level of calcium	2 (2.6%)
Decreased blood level of phosphate	2 (2.6%)
Increased blood level of a liver enzyme (alanine aminotransferase)	2 (2.6%)
Increased blood level of a liver enzyme (aspartate aminotransferase)	2 (2.6%)
Increased blood level of a liver enzyme (gamma-glutamyltransferase)	2 (2.6%)

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

Two children (2.6%, or 2 out of 78 children) experienced serious adverse reactions in this study: 1 child in the micafungin 3 mg/kg group and 1 child in the micafungin 4.5 mg/kg group.

Three children died during the study: 1 child in the micafungin 3 mg/kg group and 2 children in the 4.5 mg/kg group. One child died after the study had ended. This child was in the 3 mg/kg group. None of the children died because of micafungin.

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 February 2013. 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 child's doctor may help you understand more about the results of this study.

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