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?

An Open-label, Randomized Phase 3 Efficacy Study of ASP8273 vs Erlotinib or Gefitinib in First-line Treatment of Patients with Stage IIIB/IV Non-small Cell Lung Cancer Tumors with EGFR Activating Mutations. This was also known as the SOLAR study.

Why was this Study Needed?

Non-small cell lung cancer (or NSCLC for short) is the most common type of lung cancer. Some NSCLC cells have a mutation, or change, in the gene for a protein (called EGFR) on the cell surface. The mutated EGFR helps the NSCLC cells grow faster. Erlotinib (also known as OSI-774 and Tarceva) and gefitinib are prescription medicines taken by mouth that block mutated EGFR. When EGFR is blocked, it can no longer help cancer cells grow. NSCLC with an EGFR mutation may become resistant to erlotinib and gefitinib, which means that these medicines can no longer stop its growth or keep the cancer stable. Therefore, there was a need to study new treatments for NSCLC with an EGFR mutation. ASP8273 (also known as naquotinib) is a medicine taken by mouth that blocks mutated EGFR. That way, ASP8273 may stop or slow down the growth of NSCLC with an EGFR mutation.

This study was conducted in patients who had advanced NSCLC with an EGFR mutation. They took ASP8273 or a comparator medicine (erlotinib or gefitinib). This study compared progression-free survival between patients who took ASP8273 or comparator medicine. Progression-free survival is the length of time from the start of study medicine up until the time the cancer got worse. It was also important to find out what unwanted effects these patients had from the study medicines.

The study started in February 2016. The sponsor of this study (Astellas) did a review of the study results in May 2017. The review showed that the anticancer effects of ASP8273 did not outweigh its unwanted effects. Astellas decided to stop the ASP8273 treatment for patients who had other treatment options. Astellas continued ASP8273 treatment for patients who had no other treatment options. These were patients with a certain EGFR mutation ("exon 20 insertion"). Astellas decided not to start any new studies of ASP8273. Patients who took comparator medicine and were in this study in July 2017 could continue taking that medicine for 3 months.

The study ended in December 2017. 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 a "double-blinded" study. That means that the patients and the study doctors did not know who took which of the study medicines (ASP8273, erlotinib or gefitinib).

This study included women and men aged 18 years or older who had advanced NSCLC with an EGFR mutation. They were able to walk and take care of themselves. They were up and about more than half of the time that they were awake. And they were expected to live at least 3 months.

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 (ASP8273 or comparator) by chance alone.

- ASP8273: Patients took ASP8273 capsules (300 mg) once a day.
- Comparator: Patients took erlotinib tablets (150 mg) or gefitinib tablets (250 mg) once a day.

The patients could take study medicine until their cancer got worse, they had unwanted effects they could not tolerate, they asked to stop treatment, they died or the study doctor stopped the treatment.

This study took place at 201 clinics in several countries. 530 patients were in the study. Out of these patients, 527 patients took at least 1 dose of study medicine.

	Number of Patients
Age Group	
Aged less than 65 years	205
Aged 65 to less than 75 years	204
Aged 75 years or older	118
Sex	
Men	205
Women	322
Clinic Location	
European Union Countries (*at the time of this study*)	122
Belgium	4
France	19
Germany	17
Hungary	4
Italy	37
The Netherlands	4
Portugal	3
Romania	8
Spain	21
The UK	5
Outside European Union	405
Australia	23
Canada	6
Chile	8
Japan	128
Malaysia	42
Peru	7
Province of Taiwan	37
Republic of Korea	64
Russian Federation	5
Singapore	8
Thailand	27
Ukraine	6
The US	44

What Were the Study Results?

This study looked at the length of time from the start of study medicine up until the time the cancer get worse in half of the patients in each treatment group (median progression-free survival). The results showed that from the start of study medicine, the cancer got worse in half of the patients:

- After 9.26 months in the ASP8273 group
- After 9.59 months in the comparator (erlotinib or gefitinib) group

A statistical test showed that the difference was likely to be due to chance. Compared to erlotinib or gefitinib, ASP8273 did not improve the progression-free survival.

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	**ASP8273 (out of 265 patients)**	**Comparator: Erlotinib or Gefitinib (out of 262 patients)**
Any adverse reaction	235 (88.7%)	246 (93.9%)
Diarrhea	157 (59.2%)	129 (49.2%)
Decreased blood level of sodium	60 (22.6%)	4 (1.5%)
Inflammation (swelling and redness) or degeneration of the peripheral nerves (those nerves outside of brain and spinal cord) causing numbness, tingling, burning	54 (20.4%)	2 (0.8%)
Nausea or the urge to vomit	52 (19.6%)	20 (7.6%)
Increased blood level of a liver enzyme (alanine aminotransferase)	49 (18.5%)	49 (18.7%)
Decreased appetite	44 (16.6%)	27 (10.3%)
Fatigue or tiredness	39 (14.7%)	19 (7.3%)
Vomiting	35 (13.2%)	12 (4.6%)
Increased blood level of a liver enzyme (aspartate aminotransferase)	32 (12.1%)	40 (15.3%)
Skin reaction to medication	27 (10.2%)	185 (70.6%)
Taste changes	27 (10.2%)	9 (3.4%)
Dry skin	26 (9.8%)	65 (24.8%)
Painful swelling and sores inside the mouth	16 (6.0%)	50 (19.1%)
Itchy skin	6 (2.3%)	33 (12.6%)
Hair loss	3 (1.1%)	33 (12.6%)
Infection of the soft tissue around a fingernail	3 (1.1%)	66 (25.2%)

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

64 patients (12.1%, or 64 out of 527 patients) experienced serious adverse reactions: 46 patients in the ASP8273 group and 18 patients in the comparator (erlotinib or gefitinib) group.

74 patients (14.0%, or 74 out of 527 patients) died: 39 patients in the ASP8273 group and 35 patients in the comparator (erlotinib or gefitinib) group. The deaths of 1 patient in the ASP8273 group and 1 patient in the comparator (erlotinib or gefitinib) group could have been related to the patient’s study medicine.

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 July 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