

## **Pulmonary Graft versus Host Disease**

After allogeneic (from another person) stem cell transplantation, it is possible for the transplanted cells to react with the body. Usually this is in organs such as the skin, gastrointestinal tract and liver; but the lung can also be a target. This is referred to as chronic graft versus host disease (GVHD). The most common form of chronic lung GVHD is called Bronchiolitis Obliterans.

Bronchiolitis Obliterans is a disease that results in scarring and narrowing of the small airways. About 8-25% of people may develop some form of this after this type of transplant.

### **Symptoms**

- Shortness of breath
- Cough
- Wheezing

### **Monitoring**

There are several test we may perform to monitor your lung disease. The most common is pulmonary function testing. Most of the time we will do this right in the office and it is called spirometry.

### **Complications**

Frequent infections or flare-ups can be a problem when you have chronic lung disease. You may need antibiotics or a short course of steroids if this happens. Make sure you call your doctor if your breathing is worse than normal.

Patients with bronchiolitis obliterans or lung GVHD may have a risk of collapsed lung or pneumothorax. This is when air gets around the lung instead of inside the lung and causes problems. Symptoms of this may be suddenly feeling very short of breath or having chest pain on one side of the chest.

### **Treatment**

Although there is not a cure for bronchiolitis obliterans, there are several treatments that can make you feel better, lessen your symptoms, and help you do more activity. Several of these are:

- 1) **Inhaled Steroids** – Many people with pulmonary GVHD feel inhaled steroids make their breathing better. These medicines should be taken every day. Make sure you use a spacer and wash your mouth out after using steroid inhalers to avoid complications such as thrush.
- 2) **Oral Steroids** – Occasionally we try steroid pills to see if your breathing improves. Steroids have many side effects and if you are on these for a long time, we may need to use other medicines to try and prevent thinning of the bones, infection, and heartburn.
- 3) **Azithromycin** – This antibiotic has been shown in small studies to improve lung function in patients with bronchiolitis obliterans. The dose for this is 250 mg once a day, every other day and it is taken for at least 3 months.
- 4) **Singulair** – this is a medication we usually use to treat asthma and could possibly be of benefit in bronchiolitis obliterans. It is taken one pill every day.
- 5) **Exercise or Pulmonary Rehabilitation** – Pulmonary rehabilitation is a formal exercise program and classes given at a hospital. You go three times a week for about 2 months and afterward you can join a maintenance program. Patients feel much better after doing this program and that they can do more activity without getting as short of breath.
- 6) **Treatment of GERD** - If you have symptoms of gastroesophageal reflux (GERD) or heartburn it is important to treat this condition. Heartburn is thought to possibly contribute to the development of bronchiolitis obliterans.
- 7) **Limiting exposure to smoke or irritants** – Smoke will worsen your lung function.
- 8) **Using oxygen if needed** – If your oxygen saturation is low at rest or with exercise we will prescribe oxygen for you to use.
- 9) **Lung transplantation** – There have been cases of lung transplantation performed after bone marrow transplantation and the development of bronchiolitis obliterans. If your symptoms worsen you can be sent for an evaluation by our transplant team.

If you have questions about any treatment, please ask your doctor.