NSCLC-PDT-ISI_MOA Script

0:00
Photodynamic therapy also called PDT with Photofrin is an FDA approved treatment indicated for endobronchial non-small cell lung cancer.

0:10
There are three components of photodynamic therapy.

0:14
A 630 nanometer PDT laser Photofrin (porfimer sodium) for injection.

0:32
And an optic guide fiber optic diffuser.

0:36
Laser treatment may be repeated up to 120 hours five days after injection if residual tumor remains.

0:44
PDT with Photofrin treats visible and non-visible tumor margins along with buried lesions.

0:51
Photofrin is selectively retained in tumor cells versus healthy tissue.

0:56
PDT may cause inflammation at the site of treatment.

1:00
Photosensitivity is experienced by patients in the eyes and skin, not for emergent patients.

1:07
NSCLC non-small cell lung cancer begins when healthy cells in the lung change and grow out of control, forming a mass called a tumor, A lesion, or a nodule.

1:19
A lung tumor can begin anywhere in the lung.

1:21
A tumor can be cancerous or benign.

1:24
During the cancer formation, there may be visible and non-visible tumor growth within the lumen of the airway.

1:31
During stage 1 of photodynamic therapy, Photofrin is administered intravenously 2 milligrams per kilogram over the course of three to 5 minutes.

1:40
While cancerous and normal tissues both initially absorb Photofrin, the drug is subsequently selectively retained in the tumor cells while being flushed out of the adjacent healthy tissue.

1:54
Stage 2 of photodynamic therapy occurs 40 to 50 hours after Photofrin for injection.

2:00
To begin this process, an Opti Guide fiber optic diffuser is placed down the working channel of a bronchoscope.

2:07
The Opti Guide fiber optic diffuser is placed in or near the tumor and a non-thermal red light is delivered.

2:20
The selectivity of Photofrin allows it to self-target tumors that are partially or completely obstructing the airway as well as non-visible tumors that are buried deeper into the tissue.

2:31
The energy transfer generates reactive singlet oxygen which selectively destroys the cancer cells with up to a 6mm depth of ablation in a single direction or a diameter of up to 1.2cm.

2:50
This process triggers cancer cell apoptosis to begin.

2:54
The reactive oxygen species cause cell death.

3:06
Photodynamic therapy is proven to boost anti-tumor immunity and improves tumor cell immunogenicity, essentially training the body to attack the invading cancer.

3:22
Excited states of Photofrin, (porfimer sodium) for injection cause vasoconstriction which leads to vascular occlusion and additional tumor cell death.

3:34
Following photodynamic therapy.

3:36
Debridement may be performed if residual tumor remains.

3:41
Additional laser applications may also be given up to 120 hours post infusion.