Luncheon Symposium 3

The right inhaler for the right patient: Foster NEXThaler

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Drug delivery to the lung is an effective way for treating obstructive airway diseases, such as asthma and chronic obstructive pulmonary disease (COPD). In the past 15 years, several new drugs for the management of asthma and COPD have been marketed. These new respiratory drugs have been further equipped by innovative drug delivery systems to improve performance, dose consistency, patient adherence and satisfaction.

Failure to produce a slow and deep inhalation is the most common error made by patients using an pMDI and is more common than coordination error. Faster inhalation rate increases the likelihood of oropharyngeal deposition. To improve hand-mouth coordination and slow and deep inhalation, company developed breath-actuated MDA (BA-MDI) and soft mist inhaler (SMI), others made add-on whistle device to check optimal inspiratory flow and device actuation time.

Dry powder inhalers (DPI) require a rapid and forcible inhalation. When a patient inhales through a DPI, turbulent energy inside the device is created by the pressure drop that results from the interaction between the patient's inhalation flow and the internal design of the DPI, which translates into a resistance to airflow.

Technical improvement for DPI device were as follows, breath actuation, fine particle production, flow rate independent emitted dose, simplified operation step, and career molecule engineering.

Foster® NEXThaler DPI is multidose breathe-actuated DPI with medium resistance device. Its breath-actuated mechanism (BAM) guarantee that the dose is released only when threshold inspiratory flow of 35L/min is achieved. Internal dose protector prevent the dose from being inhaled until the BAM is triggered by optimal flow rate.

To use inhaler, the patient follow a simple three step sequence of operation (open-inhale-close). NEXThaler device has a feedback system for the patient to reassure that a dose has been inhaled. First, a

click is heard on activation of the BAM when the patient inhales through the device and the internal dose release mechanism is activated. If the inhaler is opened and then inadvertently closed without inhaling, the dose is not wasted nor does it accumulate, which avoids accidental double dosing by the patient. Second, release of the dose is confirmed through a dose counter linked to the BAM. The dose counter does not decrease after preparation but only after dose delivery. Therefore, if the patient prepares the dose but does not inhale through the device, the dose counter does not decrease. Lastly, the formulation contains lactose as a carrier molecule, which has sweet taste when inhalation of the drug from the device.

NXThaler breath-actuated DPI has been developed to improve some points of critical issues associated with the currently available DPIs and it is particularly suitable for patients with persistent asthma who require regular treatment.

Luncheon Symposium 4

· **Date:** May 12, Saturday 2018

· **Chair:** Hae-Sim Park (Ajou Univ.)

Evaluating real-life effectiveness in patients who change from a dry powder inhaler (DPI) to a pressurised metered dose inhaler (pMDI) for ICS/LABA

Ga Young Ban (Hallym Univ.)