

## **Clinical Pharmacists' Interventions to Improve Inhaler Use among Chronic Kidney Disease (CKD) Patients**

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**Introduction:** Inappropriate use of asthma inhalers can lead to increased hospitalizations, reduced quality of life (QOL), loss of productivity and increased health related costs.

Pharmacist-led interventions have shown an improvement of inhaler technique and use. The following cases describe opportunities for clinical pharmacist-led interventions to resolve problems associated with inhaler use identified from an ongoing study in renal clinic, Teaching Hospital, Anuradhapura.

### Case 1

A 61 year old male with end stage renal disease and asthma was prescribed salbutamol and beclomethasone dry powder inhaler (rotarhaler), twice a day but was still experiencing frequent asthma attacks. On questioning, the study clinical pharmacist (CP) discovered the patient had poor understanding of instructions and was alternating the use of the two inhaler drugs. The rotarhaler was 10 years old, and the patient was unaware of cleaning requirements. The CP organized counseling for the patient on inhaler use and advised the patient to get a new device.

Next clinic visit the patient came up with a cyclohaler. He didn't know the inhaler techniques of a cyclohaler. CP discussed this incident with dispensing pharmacist and arranged a counseling session for the patient.

### Case 2

A 65 year old male with chronic kidney disease, hypertension and asthma was prescribed salbutamol and beclomethasone 400 mcg twice daily. The patient however used salbutamol in the morning and beclomethasone at night which reduced his QOL and has got frequent asthma attacks. CP counseled about importance of proper adherence to asthma medication to improve QOL.

Next visit patient reported improved control of his asthma by twice daily inhaler drug use. But he inhaled both drugs simultaneously by breaking the capsules of dry powder and inserted both powders into the inhaler. The clinical pharmacist discovered the incorrect technique and counseled the patient.

**Discussion and Conclusion:** Patients' lack of health literacy is a major contributing factor for inappropriate inhaler technique and use. Simple educational programs can help to promote appropriate inhaler use.

Initial thorough patient counseling of inhaler use and continuous assessment of patients' inhaler use by a clinical pharmacist are beneficial for asthma control among CKD patients.

**Keywords:** clinical-pharmacist, counselling, asthma, inhaler, CKD

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