Inspired or Expired

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Before the invention of the MDI, asthma medication was delivered using a squeeze bulb nebulizer which was fragile, unwieldy and for the main part unreliable.[1] The relatively crude nature of the bulb nebulizer meant that the particles generated were comparatively large, and could be considered too large for effective drug delivery to the lungs.[2] Nonetheless these nebulizers paved the way for inhalation drug delivery and provided the inspiration for the development of the MDI.

MDIs were first developed in 1955 by Riker Laboratories, later a subsidiary of 3M Healthcare.[1] At that time MDIs represented a convergence of two relatively new technologies, the CFC propellant and the Meshburg metering valve which was originally designed for dispensing perfume.[3] The initial design by Riker used a glass canister coated with a vinyl plastic to improve its resilience.[1] By 1956 Riker had developed two MDI based products, the Medihaler-Ept containing epinephrine and the Medihaler-Iso containing isoprenaline.[2] Both products are agonists which provide short term relief from asthma symptoms and have now largely been replaced in asthma treatment by salbutamol which is more selective.

Inhaler device technique is fundamental to reducing morbidity and more importantly mortality in Asthma and reducing symptoms and possibly mortality in COPD. The current plethora of devices available on the market today should improve our choices and options Unfortunately, a systematic review of 144 studies over 40 years showed that we hadn't made any strides forward so it has to be about more than the inhaler device.[5] A recent Cochrnae review looked at 39 studies including more than 16,000 adults and children with asthma who were taking a steroid inhaler looked at strategies to improve adherence, and although there were some positive interventions unfortunately nothing appeared to improve outcomes in terms of control and attacks.[6]

All inhalers regardless, require inspiration but patients' ideas concerns and expectations and lifestyles are not always compatible with good inhaler use. UKIG supports the concept that inhalers are medication and the medication essential in asthma and COPD symptom control and for preventing asthma deaths. If we consider that a third of asthma deaths in the UK can be directly linked to non-adherence we have to do something differently.

If we do what we have always done we will get what we have always got we have to rethink our consultations with patients and make them effective and efficient. We have to change the perception of inhalers as 'just an inhaler'. We have a lot of inhaler devices but essentially no change in adherence or outcomes Perhaps it's time to consider whether devices are inspired or expired.

References

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