Comparing pneumonia risk in COPD patients initiating Fixed Dose Combination (FDC) inhaler comprising extrafine beclometasone dipropionate versus fluticasone

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Background: Randomised Controlled Trials show COPD patients have an increased risk of developing pneumonia when prescribed inhaled corticosteroids (ICS), with both aerosol extrafine particle size and ICS-subtype as potential effect modifiers.

Aims: Compare pneumonia risk in COPD patients prescribed extrafine formulations comprising beclometasone dipropionate (ef-FDC-BDP) to those prescribed formulations comprising fluticasone propionate or fluticasone furoate (FDC-F).

Methods: Propensity matched historical cohort study was conducted using data from the Optimum Patient Care Research Database. COPD patients aged ≥40 years with ≥1 year of continuous medical data who initiated ef-FDC-BDP or FDC-F were compared. Time to event analysis whilst on treatment was used to estimate pneumonia risk, as a sensitive (physician-diagnosed) and a specific (physician-diagnosed and x-ray or hospital admission confirmed) definition.

Results: A total of 13,316 patients were matched. In comparison to ef-FDC-BDP (median=400mcg/ day), initiation of FDC-F (median=FP 1,000mcg and FF 100 mcg/day) was associated with an increased risk of pneumonia, irrespective of definition. Increased risk of pneumonia occurred regardless of the fluticasone ester.

ef-FDC-BDP vs FDC-F **As-treated analysis**	**N**	**HR**	**95% CI**	**p-value**
Sensitive pneumonia definition	13,316	1.38	1.14-1.68	0.001
Specific pneumonia definition	13,316	1.31	1.05-1.62	0.015

Conclusion: Use of FDC-F was associated with a higher risk of pneumonia when compared to ef-FDC-BDP for both sensitive and specific definitions of pneumonia.