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W.C. MOORE ET AL.

Stopping *versus* continuing long-term mepolizumab treatment in severe eosinophilic asthma (COMET study)

Wendy C. Moore[1], Oliver Kornmann[2], Marc Humbert[3,4,5], Claude Poirier[6], Elisabeth H. Bel[7], Norihiro Kaneko[8], Steven G. Smith[9], Neil Martin[10,11], Martyn J. Gilson[12], Robert G. Price[13], Eric S. Bradford[9] and Mark C. Liu[14]

[1]Dept of Medicine, Wake Forest School of Medicine, Medical Center Boulevard, Winston-Salem, NC, USA. [2]IKF Pneumologie Frankfurt, Clinical Research Centre Respiratory Diseases, Frankfurt, Germany. [3]Université Paris-Saclay, Paris, France. [4]Assistance Publique-Hôpitaux de Paris, Service de Pneumologie et Soins Intensifs Respiratoires, Hôpital Bicêtre, Le Kremlin-Bicêtre, France. [5]INSERM U999, Le Kremlin-Bicêtre, Paris, France. [6]Département de Médecine, Service de Pneumologie, Centre Hospitalier de l'Université de Montréal (CHUM), Montreal, QC, Canada. [7]Dept of Respiratory Medicine, Amsterdam UMC, University of Amsterdam, Amsterdam, The Netherlands. [8]Dept of Pulmonary Medicine, Kameda Medical Center, Kamogawa, Japan. [9]Respiratory Therapeutic Area, GSK, Research Triangle Park, NC, USA. [10]Global Medical Affairs, GSK, Brentford, UK. [11]Institute for Lung Health, University of Leicester, Leicester, UK. [12]Respiratory Research and Development, GSK, Uxbridge, UK. [13]Biostatistics, GSK, Stevenage, UK. [14]Divisions of Allergy and Clinical Immunology, Pulmonary and Critical Care Medicine, Johns Hopkins Asthma and Allergy Center, Baltimore, MD, USA.

Corresponding author: Wendy C. Moore (wmoore@wakehealth.edu)

Shareable abstract (@ERSpublications)
This randomised study demonstrates increased exacerbation risk and a decrease in asthma control in patients with severe eosinophilic asthma who stop mepolizumab treatment after long-term use, when compared with those who continue treatment. https://bit.ly/3fsxGV2

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Abstract

Background The long-term efficacy and safety of mepolizumab for treatment of severe eosinophilic asthma are well established. Here, we examine the clinical impact of stopping mepolizumab after long-term use.

Methods COMET (NCT02555371) was a randomised, double-blind, placebo-controlled, parallel-group, multicentre study. Patients who had completed COLUMBA (NCT01691859) or COSMEX (NCT02135692) and received continuous mepolizumab treatment for ⩾3 years were randomised 1:1 to stop (switch to placebo) or continue subcutaneous mepolizumab 100 mg every 4 weeks for 52 weeks. Primary end-point: time to first clinically significant exacerbation; secondary end-points: time to first exacerbation requiring hospitalisation/emergency department visit, time to decrease in asthma control (⩾0.5-point increase in Asthma Control Questionnaire-5 score from COMET baseline) and blood eosinophil count ratio to COMET baseline. Safety was assessed.

Results Patients stopping (n=151) *versus* continuing (n=144) mepolizumab had significantly shorter times to first clinically significant exacerbation (hazard ratio 1.61, 95% CI 1.17–2.22; p=0.004) and decrease in asthma control (hazard ratio 1.52, 95% CI 1.13–2.02; p=0.005), and higher blood eosinophil counts at week 52 (270 *versus* 40 cells·μL^{-1}; ratio (stopping *versus* continuing) 6.19, 95% CI 4.89–7.83; p<0.001). Differences in efficacy outcomes between groups were observed when assessed from week 12 (16 weeks after last mepolizumab dose). Exacerbations requiring hospitalisation/emergency department visit were rare. Adverse events in patients continuing mepolizumab were consistent with previous studies. For patients who stopped mepolizumab, the safety profile was consistent with other eosinophilic asthma populations.

Conclusion Patients who stopped mepolizumab had an increase in exacerbations and reduced asthma control *versus* those who continued.

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