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Mepolizumab effectiveness and identification of super-responders in severe asthma

Erin S. Harvey[1,2], David Langton[3,4], Constance Katelaris[5,6], Sean Stevens[1], Claude S. Farah[7], Andrew Gillman[8], John Harrington[2], Mark Hew[8], Vicky Kritikos[9], Naghmeh Radhakrishna[10], Philip Bardin[11], Matthew Peters[7], Paul N. Reynolds[12], John W. Upham[13,14], Melissa Baraket[15,16], Simon Bowler[17], Jeffrey Bowden[18], Jimmy Chien[19,20], Li Ping Chung[21], Christopher Grainge[2], Christine Jenkins[7,22], Gregory P. Katsoulotos[23,24,25], Joy Lee[26], Vanessa M. McDonald[1,2], Helen K. Reddel[9], Janet Rimmer[25,27], Peter A.B. Wark[1,2] and Peter G. Gibson[1,2]

Affiliations: [1]Centre of Excellence in Severe Asthma and Priority Research Centre for Healthy Lungs, Faculty of Health, University of Newcastle, Newcastle, Australia. [2]Dept of Respiratory and Sleep Medicine, John Hunter Hospital, Newcastle, Australia. [3]Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Australia. [4]Dept of Thoracic Medicine, Frankston Hospital, Frankston, Australia. [5]School of Medicine, Western Sydney University, Campbelltown, Australia. [6]Immunology and Allergy Unit, Campbelltown Hospital, Campbelltown, Australia. [7]Dept of Thoracic Medicine, Concord Hospital, Concord, Australia. [8]Allergy, Asthma and Clinical Immunology, Alfred Health, Melbourne, Australia. [9]Dept of Respiratory and Sleep Medicine, Royal Prince Alfred Hospital, Camperdown, Australia. [10]Respiratory Dept, St Vincent's Hospital, Melbourne, Australia. [11]Lung and Sleep Medicine, Monash University and Medical Centre, Clayton, Australia. [12]Lung Research, Hanson Institute and Dept of Thoracic Medicine, Royal Adelaide Hospital, Adelaide, Australia. [13]Dept of Respiratory Medicine, Princess Alexandra Hospital, Woolloongabba, Australia. [14]The University of Queensland Diamantina Institute, Woolloongabba, Australia. [15]South Western Sydney Clinical School, University of New South Wales, Sydney, Australia. [16]Ingham Institute for Applied Medical Research, Sydney, Australia. [17]Dept of Respiratory Medicine, Mater Hospital Brisbane, South Brisbane, Australia. [18]Respiratory and Sleep Services, Flinders Medical Centre and Flinders University, Bedford Park, Australia. [19]Dept of Sleep and Respiratory Medicine, Westmead Hospital, Westmead, Australia. [20]School of Medicine, The University of Sydney, Sydney, Australia. [21]Dept of Respiratory Medicine, Fiona Stanley Hospital, Murdoch, Australia. [22]Concord Clinical School University of Sydney, Concord, Australia. [23]St George Specialist Centre, Kogarah, Australia. [24]St George and Sutherland Clinical School, University of New South Wales, Sydney, Australia. [25]Woolcock Institute of Medical Research, Glebe, Australia. [26]Austin Health and Monash University, Melbourne, Australia. [27]St Vincent's Clinic, Darlinghurst, Australia.

Correspondence: Peter G. Gibson, Hunter Medical Research Institute, Lot 1 Kookaburra Circuit, New Lambton Heights NSW 2305, Australia. E-mail: peter.gibson@health.nsw.gov.au

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In clinical practice, mepolizumab reduces the burden of severe eosinophilic asthma by reducing severe exacerbations and improving asthma control, quality of life and lung function. Super-responders have a T2 phenotype and few comorbidities. http://bit.ly/2UIio4x

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ABSTRACT Severe asthma is a high-burden disease. Real-world data on mepolizumab in patients with severe eosinophilic asthma is needed to assess whether the data from randomised controlled trials are applicable in a broader population.

The Australian Mepolizumab Registry (AMR) was established with an aim to assess the use, effectiveness and safety of mepolizumab for severe eosinophilic asthma in Australia.

Patients (n=309) with severe eosinophilic asthma (median age 60 years, 58% female) commenced mepolizumab. They had poor symptom control (median Asthma Control Questionnaire (ACQ)-5 score of 3.4), frequent exacerbations (median three courses of oral corticosteroids (OCS) in the previous 12 months), and 47% required daily OCS. Median baseline peripheral blood eosinophil level was 590 cells·μL^{-1}. Comorbidities were common: allergic rhinitis 63%, gastro-oesophageal reflux disease 52%, obesity 46%, nasal polyps 34%.

Mepolizumab treatment reduced exacerbations requiring OCS compared with the previous year (annualised rate ratio 0.34 (95% CI 0.29–0.41); p<0.001) and hospitalisations (rate ratio 0.46 (95% CI 0.33–0.63); p<0.001). Treatment improved symptom control (median ACQ-5 reduced by 2.0 at 6 months), quality of life and lung function. Higher blood eosinophil levels (p=0.003) and later age of asthma onset (p=0.028) predicted a better ACQ-5 response to mepolizumab, whilst being male (p=0.031) or having body mass index $\geqslant$30 (p=0.043) predicted a lesser response. Super-responders (upper 25% of ACQ-5 responders, n=61, 24%) had a higher T2 disease burden and fewer comorbidities at baseline.

Mepolizumab therapy effectively reduces the significant and long-standing disease burden faced by patients with severe eosinophilic asthma in a real-world setting.