

Meeting the demand of PDMPs



Albert Farrugia
Clinical Professor
University of Western Australia
Scientific Consultant



International Plasma and Fractionation Association

ALL OPINIONS VOICED IN THIS PRESENTATION
ARE STRICTLY MINE, AND DO NOT REPRESENT
THOSE OF ANY OF MY AFFILIATIONS
...ALTHOUGH I KEEP WORKING ON IT.

The concept of Latent Therapeutic Demand

- *Usage approaches sufficiency as supply approaches the latent therapeutic demand*
- We define Latent Therapeutic Demand (LTD) as *the underlying demand that represents how physicians would prescribe treatment and how patients would comply with the prescribed treatment if ample supplies were available and affordable, and access to therapy was unencumbered by issues other than evidence-based clinical need, such as financial constraints.*

Estimating latent therapeutic demand plasma therapies

J Clin Immunol (2014) 34:233–244
DOI 10.1007/s10875-013-9975-1

ORIGINAL RESEARCH

Modeling Primary Immunodeficiency Disease Epidemiology and Its Treatment to Estimate Latent Therapeutic Demand for Immunoglobulin

Jeffrey S. Stonebraker · Albert Farrugia · Benjamin Gathmann · ESID Registry Working Party · Jordan S. Orange

Received: 6 January 2021 | Revised: 3 May 2021 | Accepted: 4 May 2021

DOI: 10.1111/vox.13134

ORIGINAL ARTICLE

Vox Sanguinis  International Society of Blood Transfusion

Estimation of the latent therapeutic demand for immunoglobulin therapies in autoimmune neuropathies in the United States

Albert Farrugia¹ | Megha Bansal² | Ivan Marjanovic³

ORIGINAL PAPER

Vox Sanguinis (2018) 113, 430–440

© 2018 International Society of Blood Transfusion
DOI: 10.1111/vox.12651

Latent therapeutic demand model for the immunoglobulin replacement therapy of primary immune deficiency disorders in the USA

J. S. Stonebraker,¹ J. Hajjar² & J. S. Orange²

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²Section of Immunology, Allergy and Rheumatology, Texas Children's Hospital, Department of Pediatrics, Baylor College of Medicine, Houston, TX, USA

Haemophilia (2004), 10, 18–26

Modelling haemophilia epidemiology and treatment modalities to estimate the unconstrained factor VIII demand

J. S. STONEBRAKER,* R. E. AMAND,* M. V. BAUMAN,* A. J. NAGLE† and P. J. LARSON*

*Bayer HealthCare, Biological Products Division, Research Triangle Park, NC, USA; †Formerly with Bayer Healthcare, now with Novozymes A/S, Bagsvaerd, Denmark

Critical Care

BMC

► Crit Care. 2015 Mar 16;19(Suppl 1):P354. doi: [10.1186/cc14434](https://doi.org/10.1186/cc14434)

Estimation of the latent therapeutic demand for albumin in the USA: a focus on three indications

A Farrugia¹, M Bansal²



THE LATENT THERAPEUTIC DEMAND OF IMMUNOGLOBULINS IN MULTIPLE MYELOMA IN AUSTRALIA

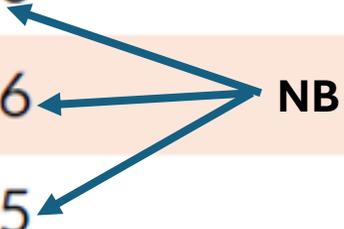
S. P. H. Van den Berg^[1], T. Rispen^[2], W. Dyer^[3], A. Irving^[4], J. McQuilten^[5], L. von Bonsdorff^[6], A. Farrugia^{[1][10]}

[1] Sanquin Research, Amsterdam, The Netherlands; [2] Australian Red Cross Lifeblood, Sydney, Australia; [3] School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia; [4] International Plasma and Fractionation Association, Amsterdam, The Netherlands; [5] Department of Surgery, University of Western Australia, Perth, Australia

Latent therapeutic demand for IG in the USA

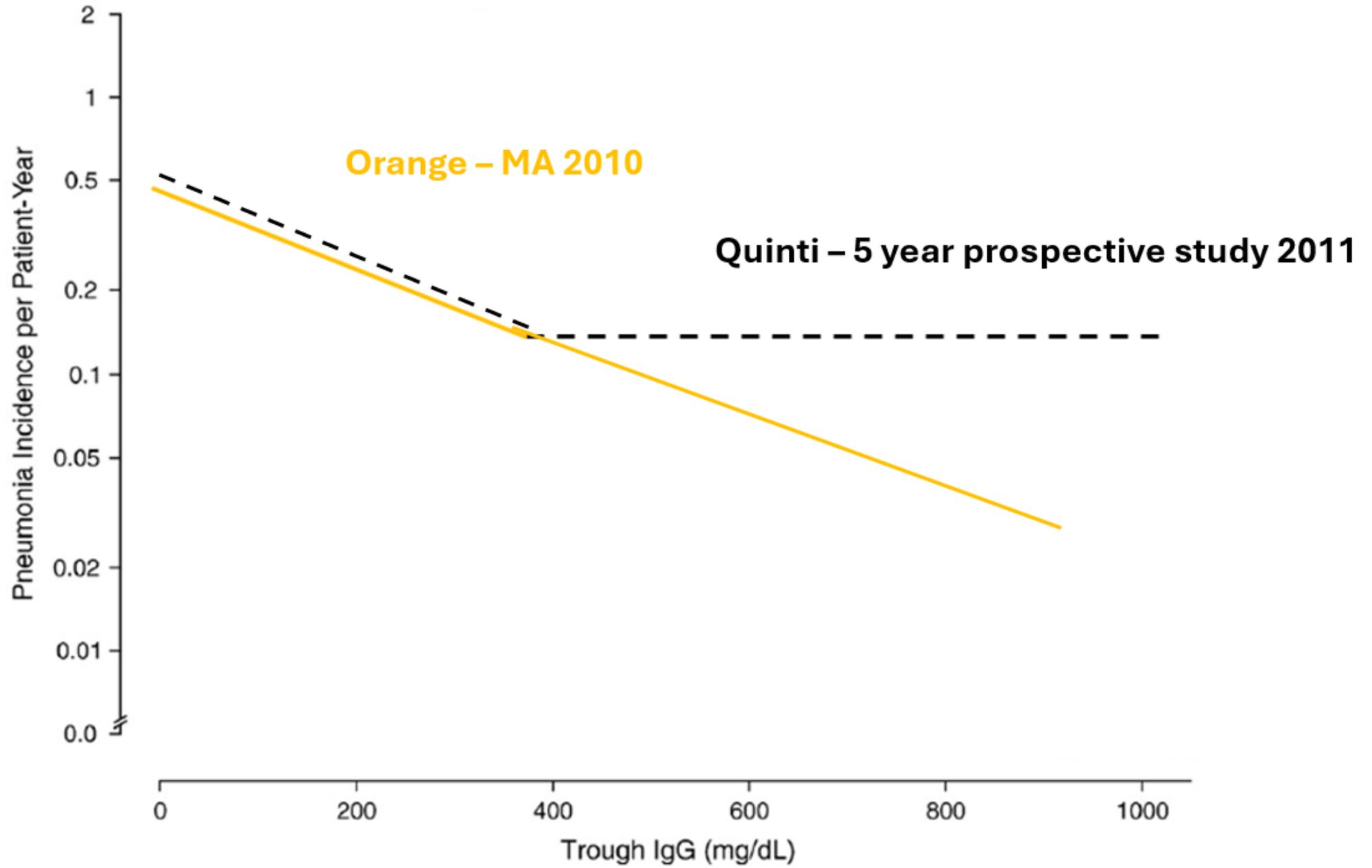
Primary Immune Deficiencies

Condition	Mean LTD immunoglobulin g/10 ³ population
Common variable immune deficiency (CVID)	65.4 ± 73.6
X-linked agammaglobulinemia (XLA)	25.5 ± 27.6
Severe combined immune deficiency (SCID)	13.4 ± 13.5
Wiskott–Aldrich syndrome (WAS)	0.5 ± 0.4
hyper IGM syndrome (HIGM)	0.3 ± 0.3

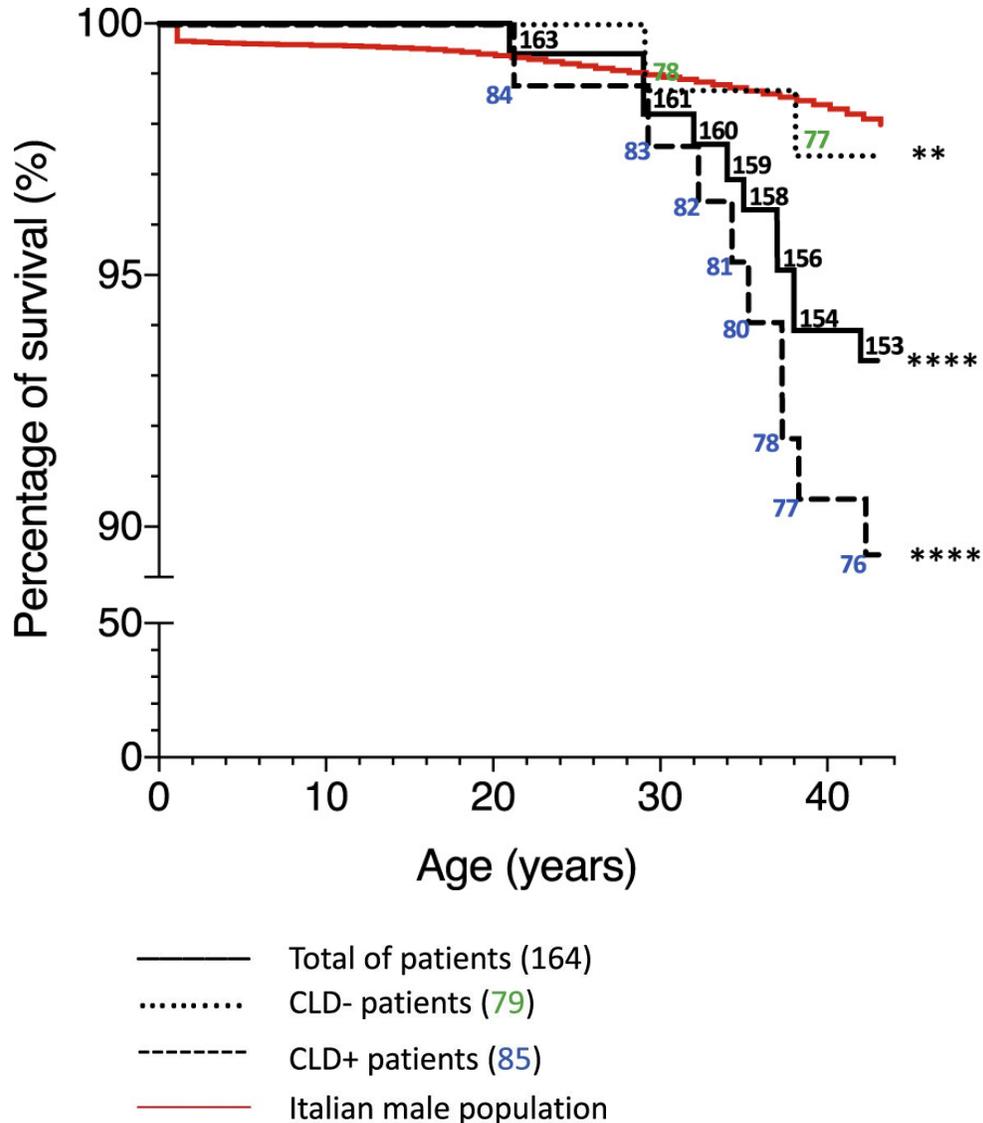


NB

IG through levels and risk of pneumonia in PID

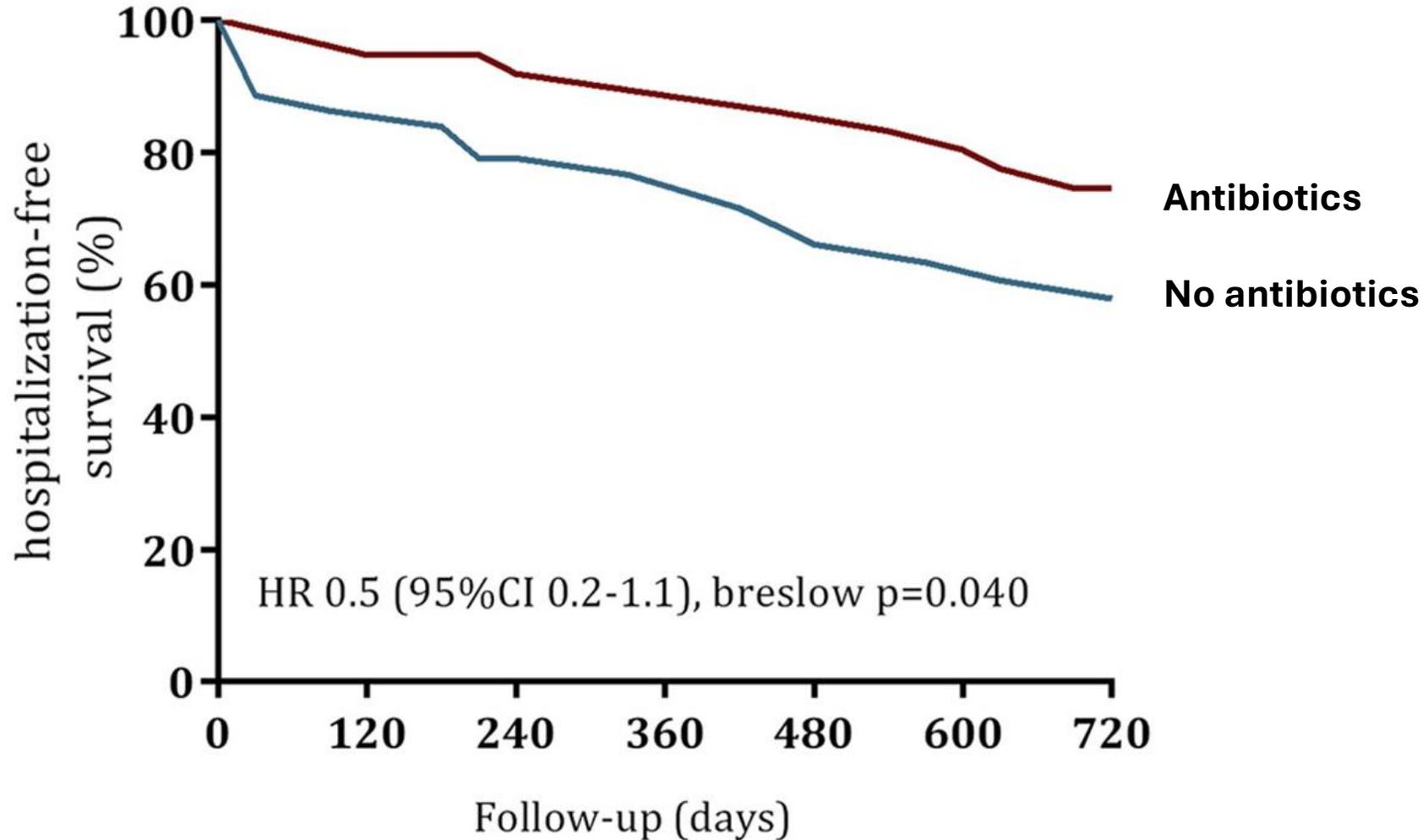


Survival of Italian patients with XLA during long-term follow-up

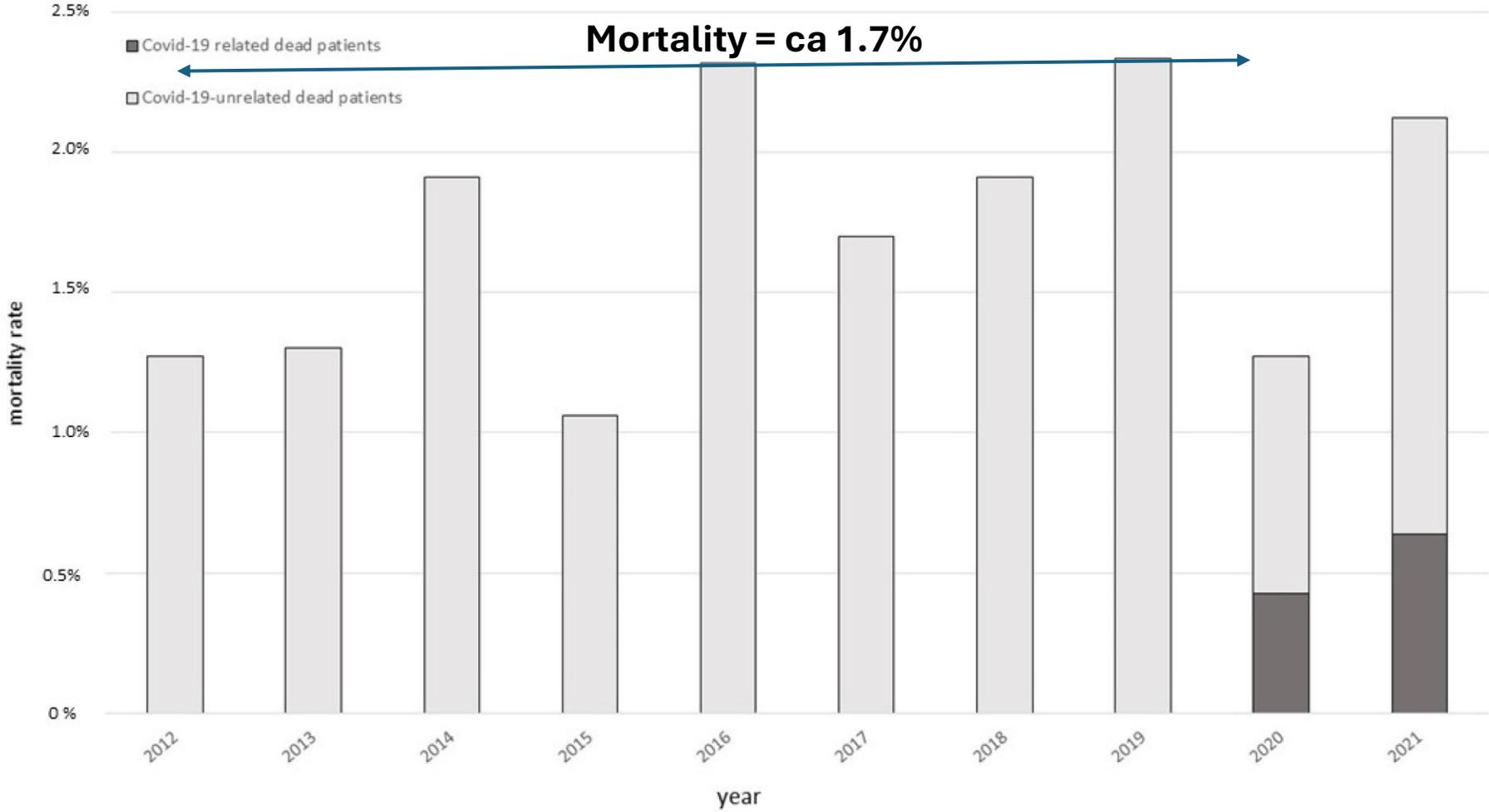


“The high prevalence of CLD in our cohort suggests that **regular IgG supplementation does not prevent development of this complication....** Considering the impact of CLD on everyday life and especially on long-term outcome, physicians should pay more attention to lung morbidity in XLA and **consider, as early as possible, a personalized respiratory physiotherapy program and/or an antibiotic prophylaxis regimen for affected patients.**”

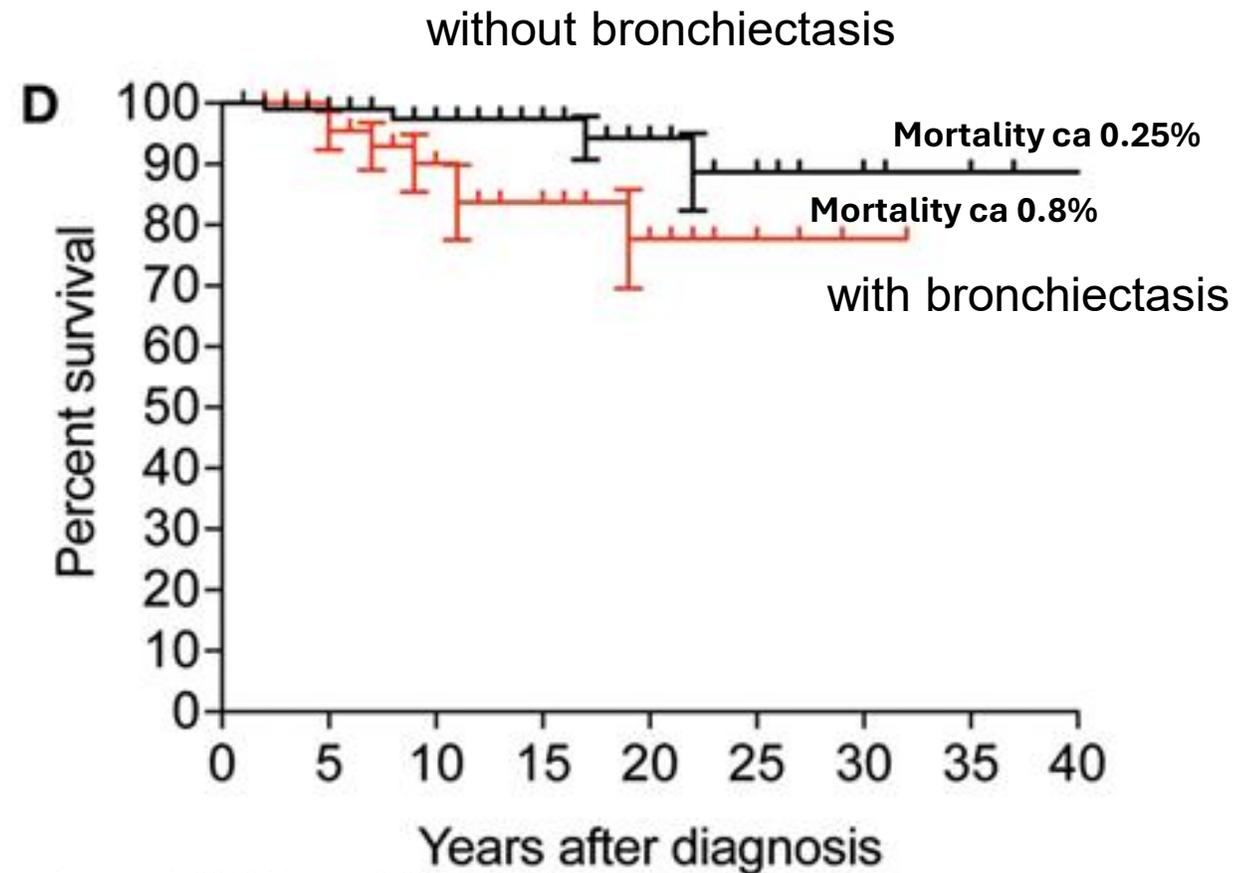
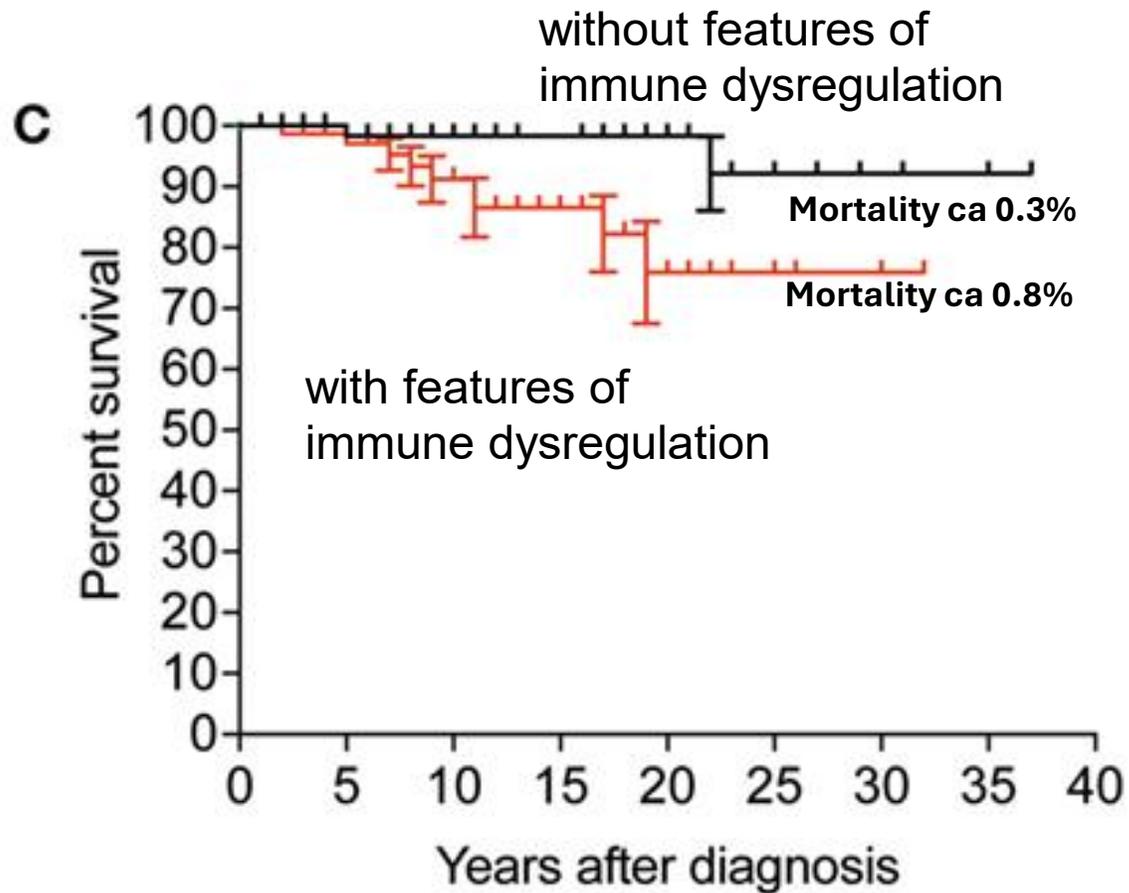
Double-blind, placebo-controlled, randomized trial on low-dose azithromycin prophylaxis in patients with primary antibody deficiencies
Patients on individualized IVIG



Mortality in Severe Antibody Deficient Italian Patients



Mortality in a cohort of Australian PID patients *Treated with IG*



Bodies in the streets? –

| - In 2016 UK used > 1/3 of the IG/capita that Australia used – BUT.....

Clinical & Experimental Immunology
The Journal of Translational Immunology

British Society for
immunology

Clinical and Experimental Immunology

ORIGINAL ARTICLE

doi:10.1111/cei.12748

Clinical and laboratory correlates of lung disease and cancer in adults with idiopathic hypogammaglobulinaemia

Four hundred and seventy-three (59%) patients suffered from overt bacterial LRTI and 377 (47%) from bronchiectasis (Table 1). Patients with a history of bacterial LRTI

Primary immunodeficiency disease: a cost-utility analysis comparing intravenous vs subcutaneous immunoglobulin replacement therapy in Australia

Tanja M. Windegger¹, Son Nghiem², Kim-Huong Nguyen^{3,4}, Yoke L. Fung¹, Paul A. Scuffham²

Therefore, side effects and adverse events were not included in the model.

In our cohort, 21% of patients had bronchiectasis when they joined the study. Of the PID patients with bronchiectasis, 50% went to hospital ED instead of the GP when seeking

-the data available for the rate of bronchiectasis in PID patients in the UK is twice that of PID patients in Australia.
- Bronchiectasis is an indicator of
 1. Diagnostic delay
 2. Undertreatment

Bodies in the streets?

|| - NZ uses 1/3 of the IG/capita that Australia uses – BUT.....

Clinical and Experimental Immunology

ORIGINAL ARTICLE

doi: 10.1111/cei.13595

Bronchiectasis is associated with delayed diagnosis and adverse outcomes in the New Zealand Common Variable Immunodeficiency Disorders cohort study

[‡]Department of Molecular Medicine and Pathology, University of Auckland, [§]School of Population Health, University of Auckland, [¶]Population Health Directorate, Counties Manukau Health, Auckland, ^{**}Department of Clinical Immunology, Fiona Stanley Hospital, Perth, WA Australia, ^{††}Department of Clinical Immunology, Christchurch Hospital.

as early-onset disease, delay in diagnosis and increased numbers of infections were associated with greater risk of bronchiectasis. One hundred and seven adult patients with a diagnosis of CVID are currently enrolled in the NZCS, comprising approximately 70% of patients known to have CVID in New Zealand. Fifty patients (46.7%) had radiologically proven bronchiectasis. This study has shown that patients with compared to those without bronchiectasis have an increased mortality at a younger age. CVID patients with bronchiectasis had a greater number of severe infections consequent

Primary immunodeficiency disease: a cost-utility analysis comparing intravenous vs subcutaneous immunoglobulin replacement therapy in Australia

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IPOPI Global Survey – HRQoL in PID

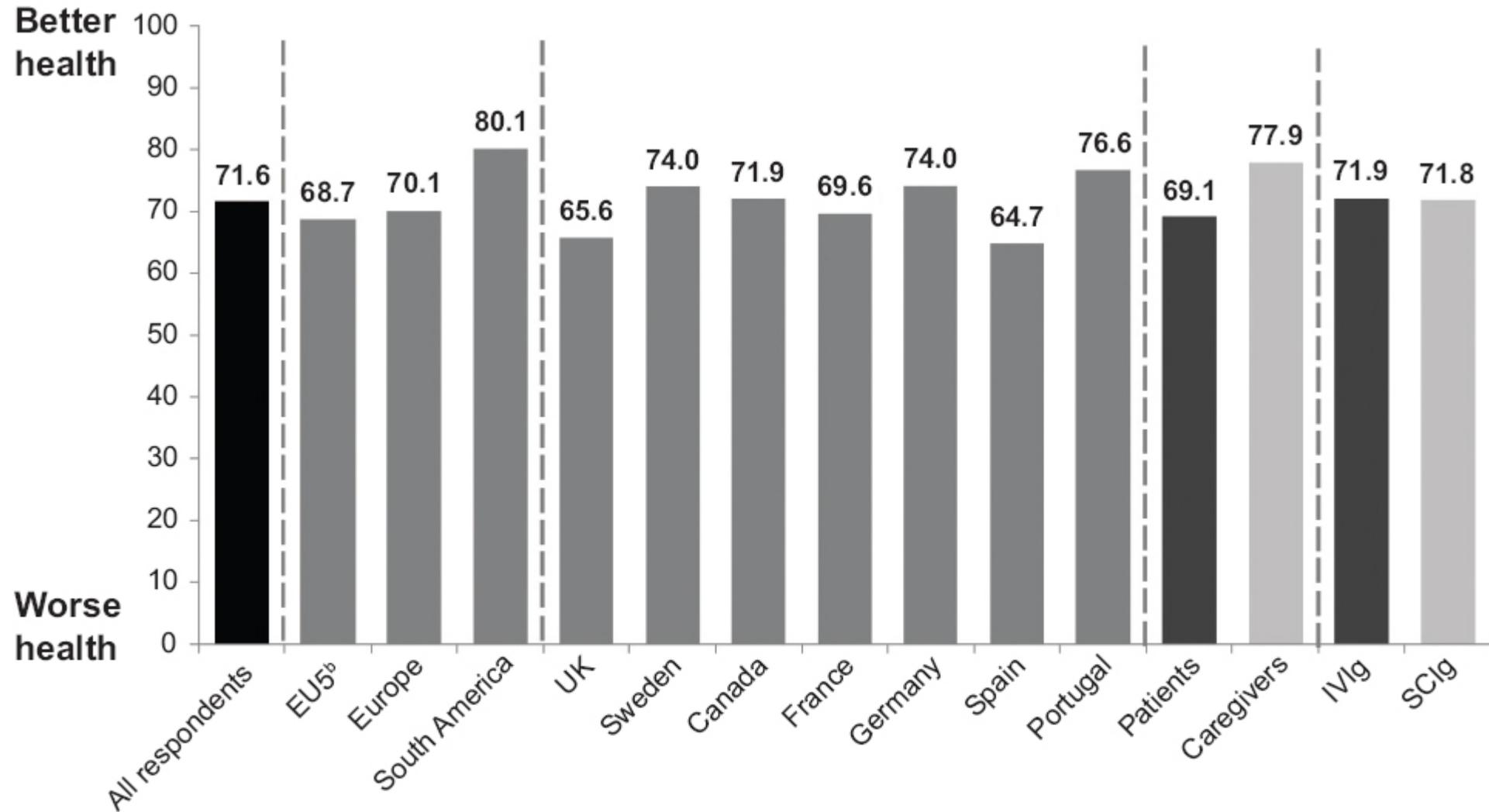


Figure 1 Health of patients with primary immunodeficiency disease by country and route of immunoglobulin administration (visual analog scale).^a

Notes: ^aEQ-5D questionnaire; ^bEU5 indicates UK, France, Germany, Spain, and Italy.

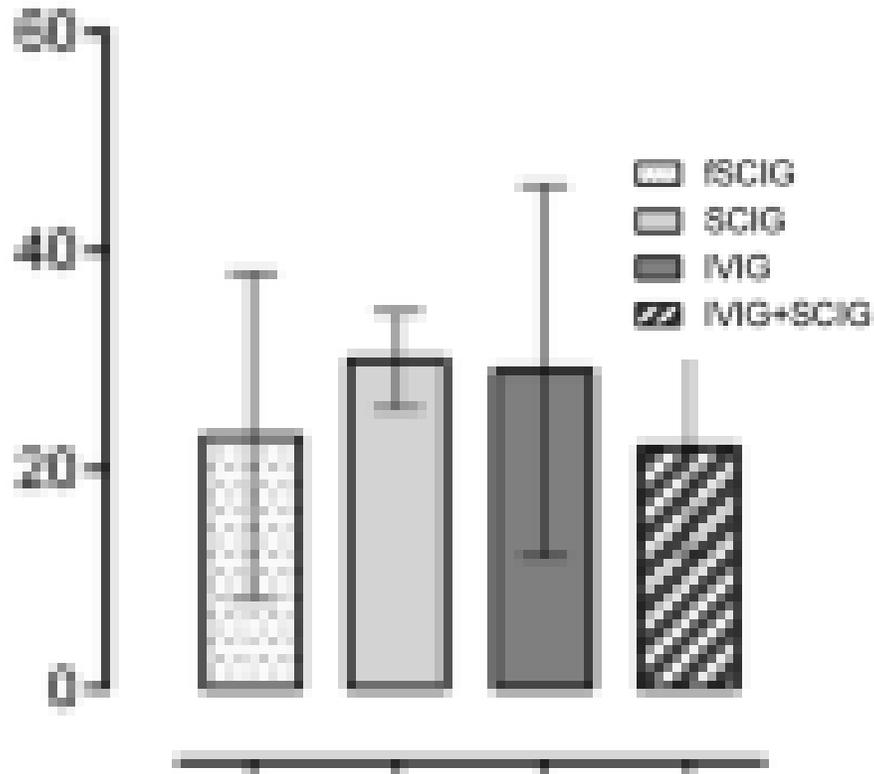
Abbreviations: Ig, immunoglobulin; IV, intravenous; SC, subcutaneous; EQ-5D, EuroQoL 5 Dimensions.

HRQoL Patients with CVID

Different Schedules of Immunoglobulin Administration

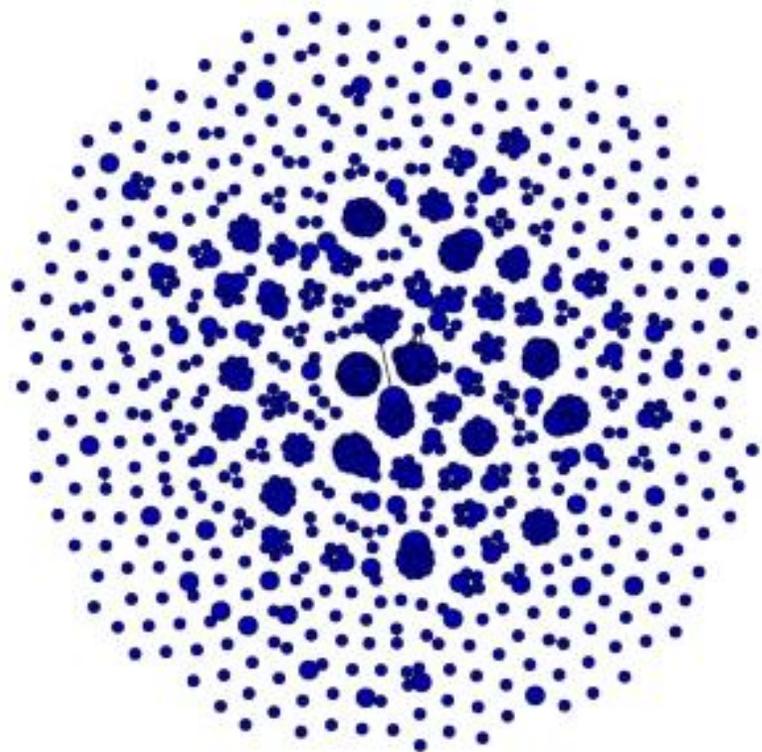
Prospective Multicenter Study

CVID_QoL

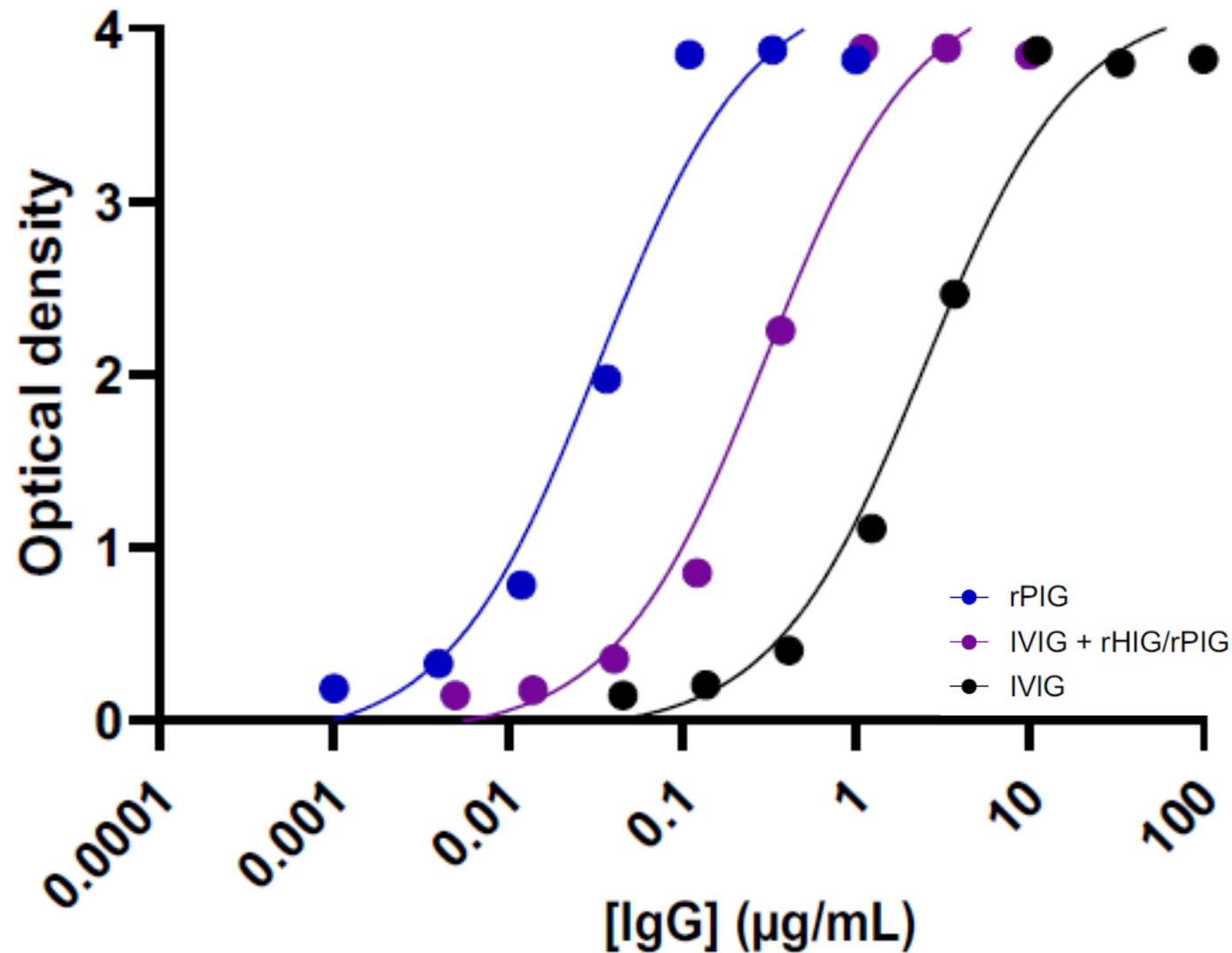


	mean (SD)		P value
	10 (g/dL)	5 (g/dL)	
Age, year	48.0 (15.3)	51.4 (15.2)	0.314
Cumulative monthly Ig dose (mg/kg)	336.8 (167.3)	339.1 (136.8)	0.943
Number of monthly administrations	1.9 (0.7)	2.0 (0.9)	0.894
Patients receiving antibiotic prophylaxis; n (%)	5 (19.2)	0 (0)	0.948
Time (years) from CVID diagnosis	12.5 (11.3)	14.9 (11.1)	0.337
IgG trough serum levels (mg/dl)	670.0 (191.1)	672.4 (148.4)	0.946
All infections. episodes-year	5.3 (5.2)	4.9 (4.8)	0.718
COPD; n (%)	30 (30.0)	16 (61.5)	0.405
CVID-complication, cumulative number	2.3 (1.4)	2.2 (1.6)	0.842
CVID_QOL (%)	27 (15)	29 (18)	0.635

Generation and characterization of a recombinant hyperimmune globulin for PID.



Clonal cluster analysis **recombinant pneumococcus immune globulin**. Each node represents an antibody clone (full-length heavy chain). Similar results with **recombinant Haemophilus immune globulin**

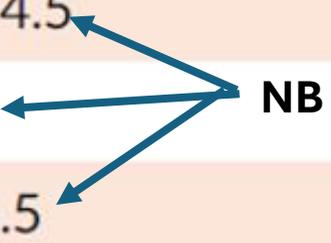


Pneumococcal or Hib antibody binding of IVIG + rPIG by ELISA. Binding of serially diluted rPIG, IVIG + rPIG, and IVIG was measured by ELISA

Latent therapeutic demand for IG in the USA

Neuropathies

Condition	Mean LTD immunoglobulin g/10 ³ population
Chronic inflammatory demyelinating polyneuropathy (CIDP)	83.05 ± 24.5
Guillain-Barré syndrome (GBS)	6.1 ± 3.2
Multifocal motor neuropathy (MMN)	36.1 ± 25.5



NB

Intravenous immunoglobulin for chronic inflammatory demyelinating polyradiculoneuropathy

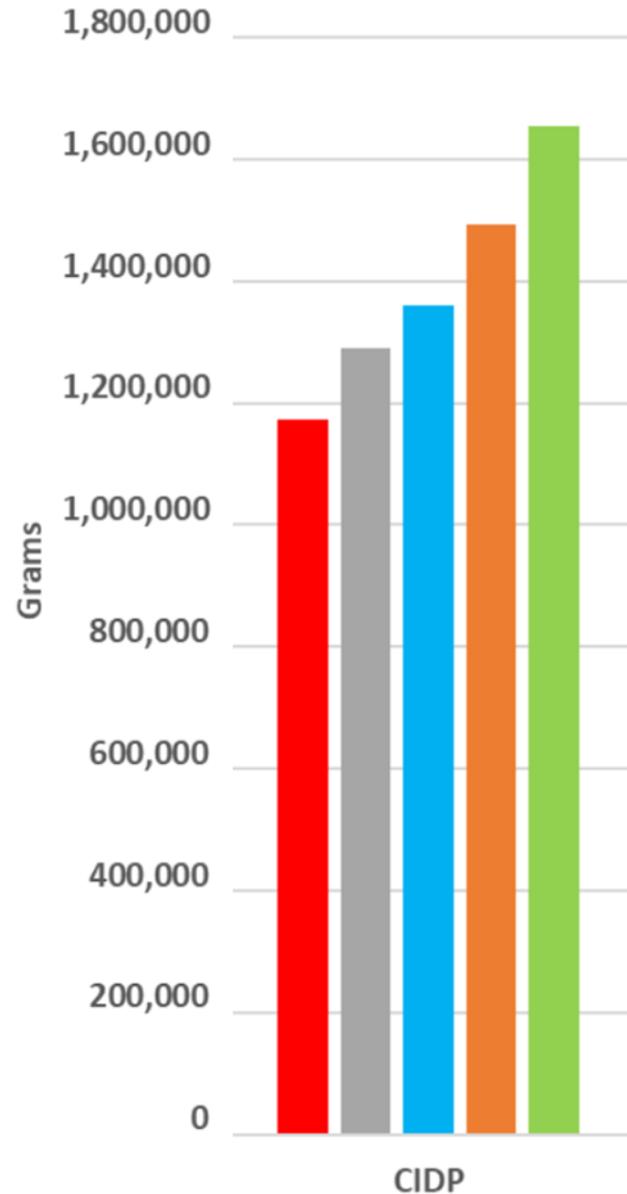
Cochrane Systematic Review - Intervention | Version published: 30 December 2013 [see what's new](#)<https://doi.org/10.1002/14651858.CD001797.pub3> [New search](#)[Conclusions changed](#)[Used in 1 guideline](#)[View article information](#)[Filip Eftimov](#) | [John B Winer](#) | [Marinus Vermeulen](#) | [Rob de Haan](#) | [✉ Ivo N van Schaik](#)[View authors' declarations of interest](#)

Authors' conclusions

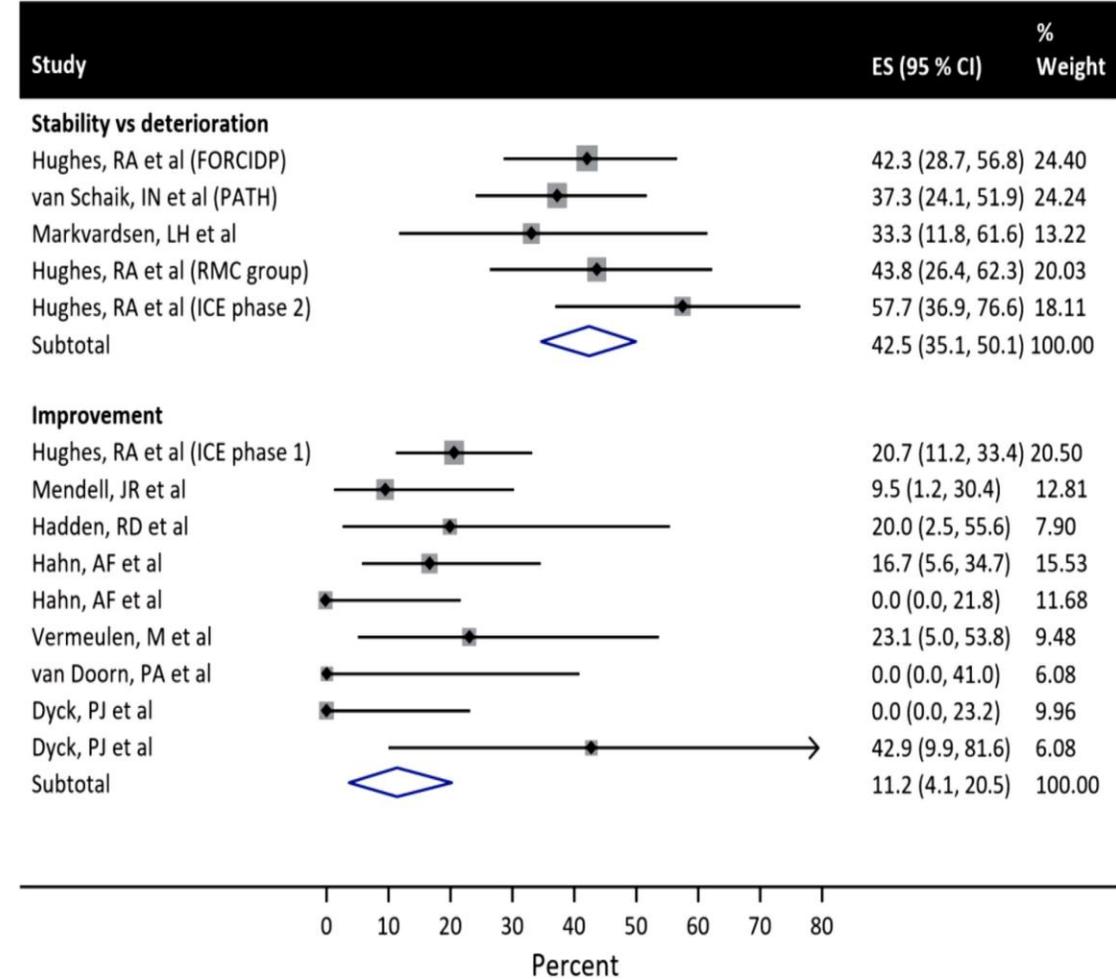
The evidence from RCTs shows that IVIg improves disability for at least two to six weeks compared with placebo, with an NNTB of three. ***During this period it has similar efficacy to plasma exchange, oral prednisolone and intravenous methylprednisolone.*** In one large trial, the benefit of IVIg persisted for 24 and possibly 48 weeks. Further research is needed to compare the long-term benefits as well as side effects of IVIg with other treatments.

IG usage in CIDP – The Australian case

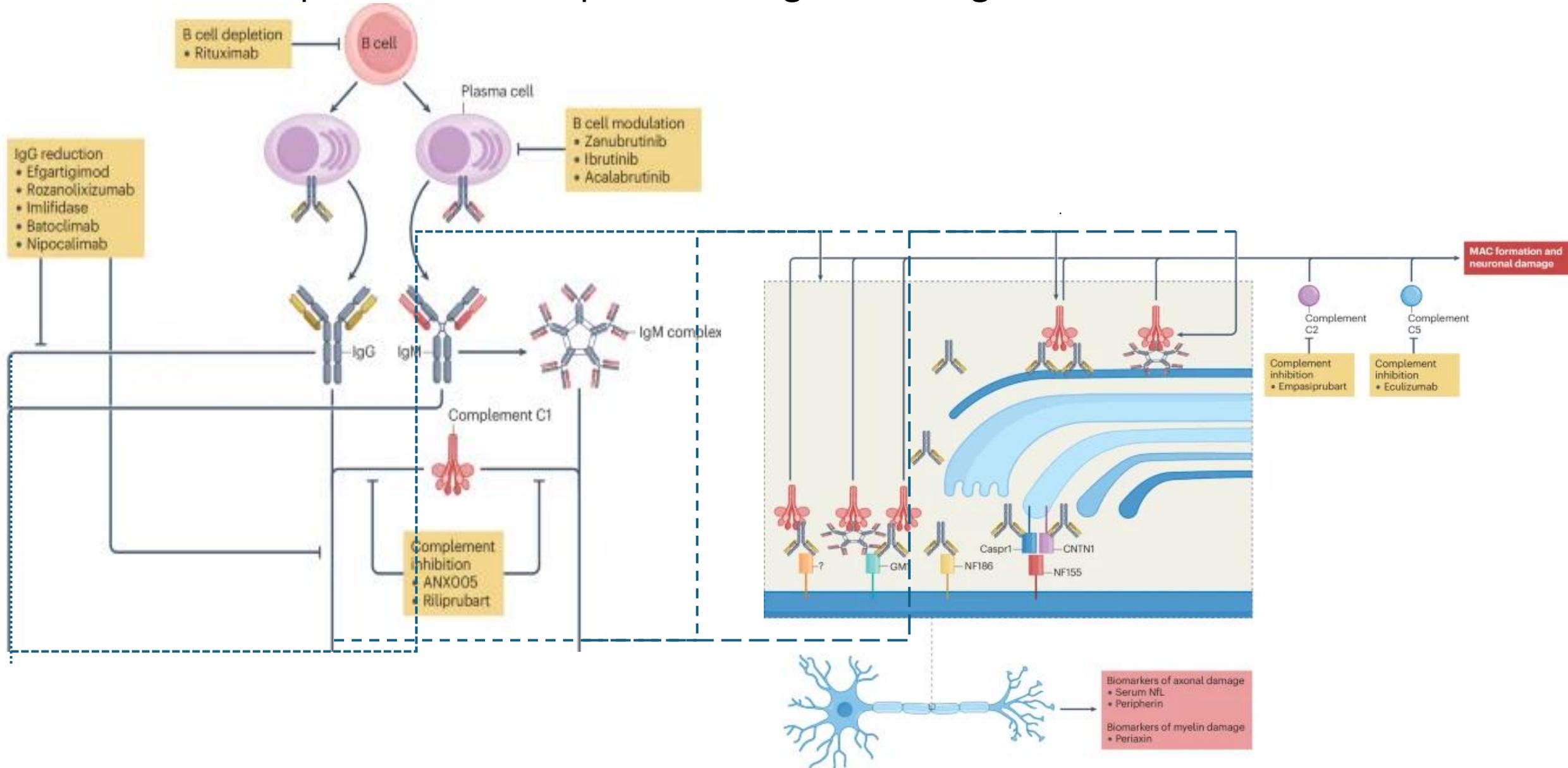
- Number of patients prescribed Ig 2017-2018 = 2795
- Prevalence estimate using EFNS/PNS criteria = 518-1593



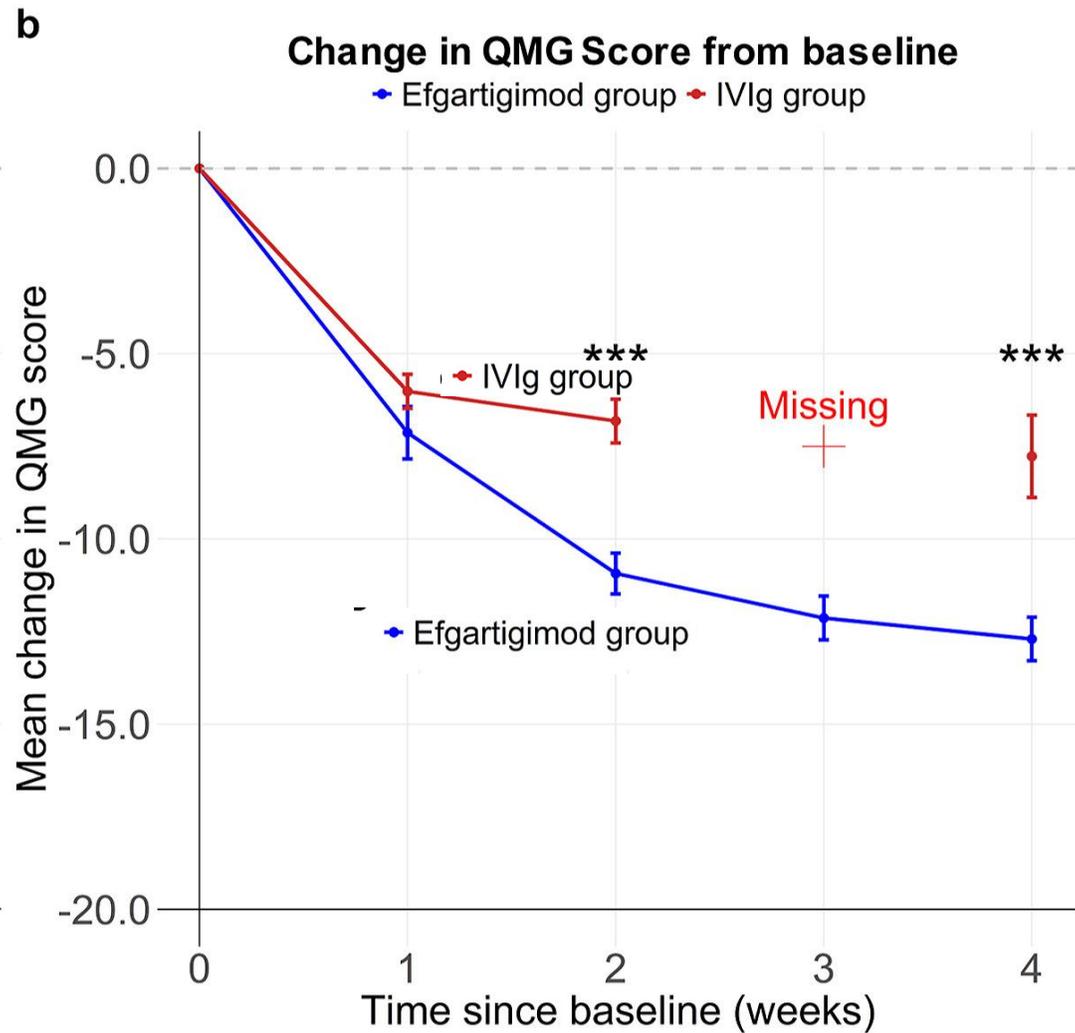
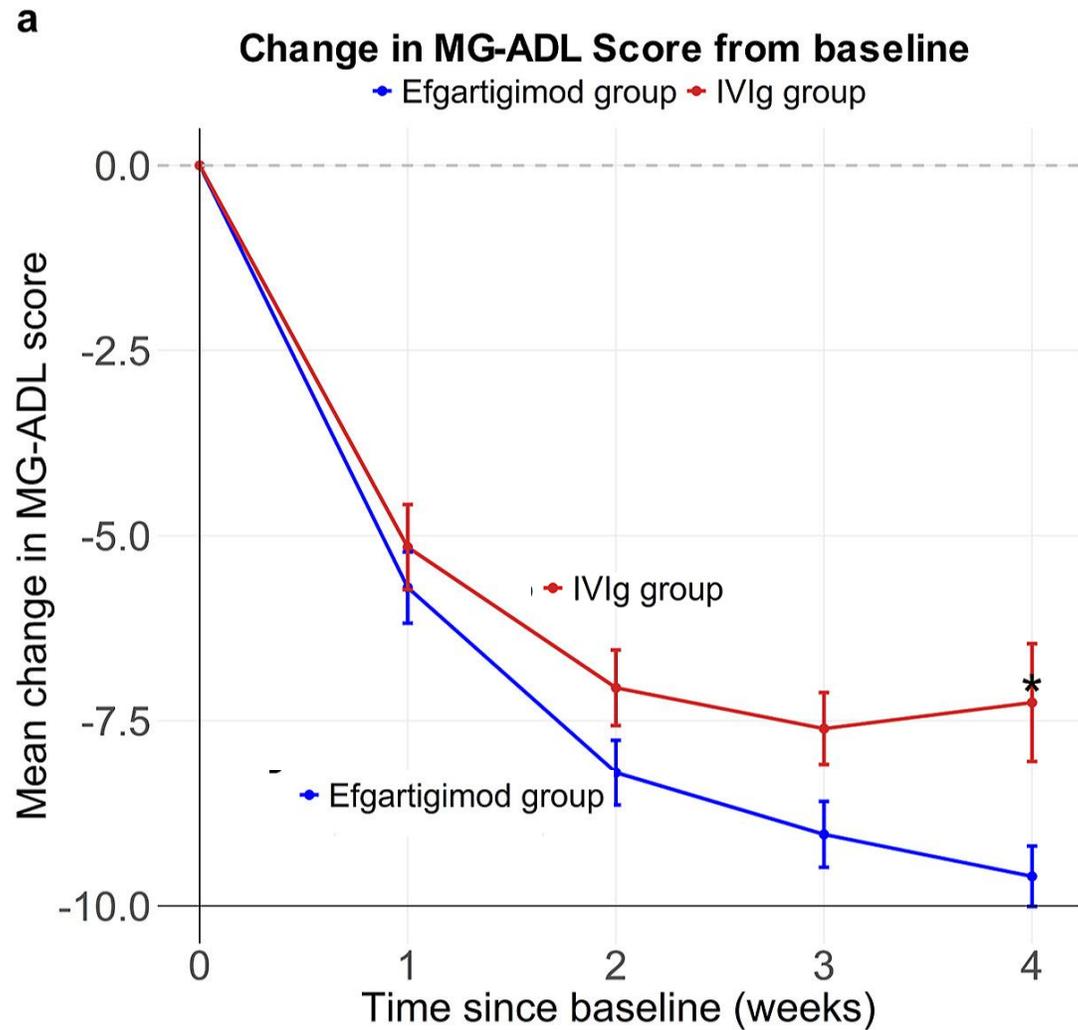
Placebo effect in CIDP



Current understanding of pathophysiological mechanisms in primary autoimmune neuropathies and therapeutic strategies that target these mechanisms.

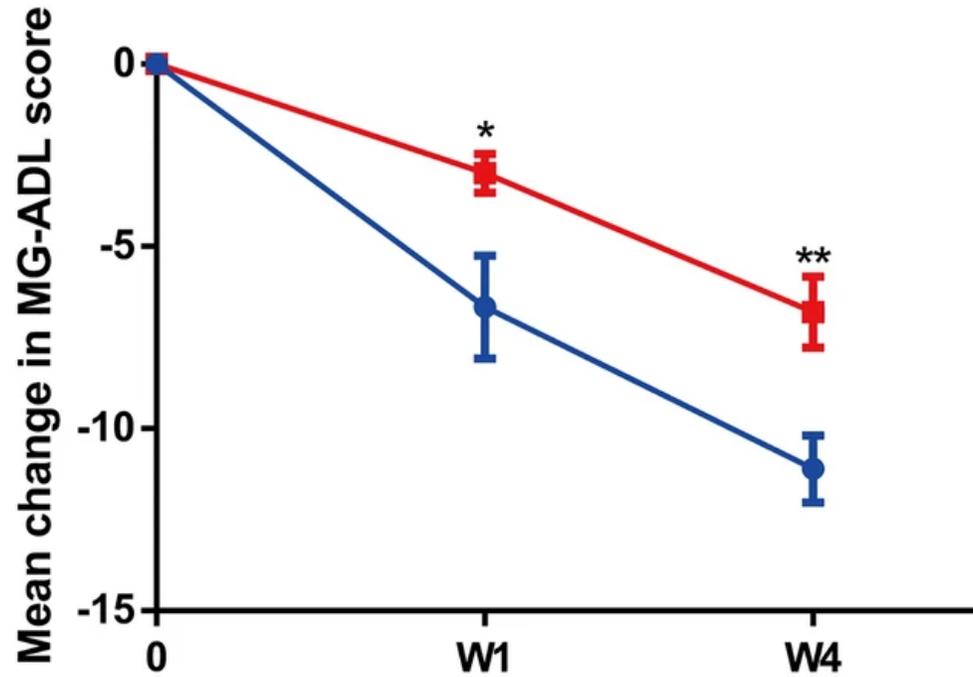


Efficacy and safety of efgartigimod versus intravenous immunoglobulin in early intervention of acetylcholine receptor antibody-positive impending myasthenic crisis: A *retrospective cohort* study

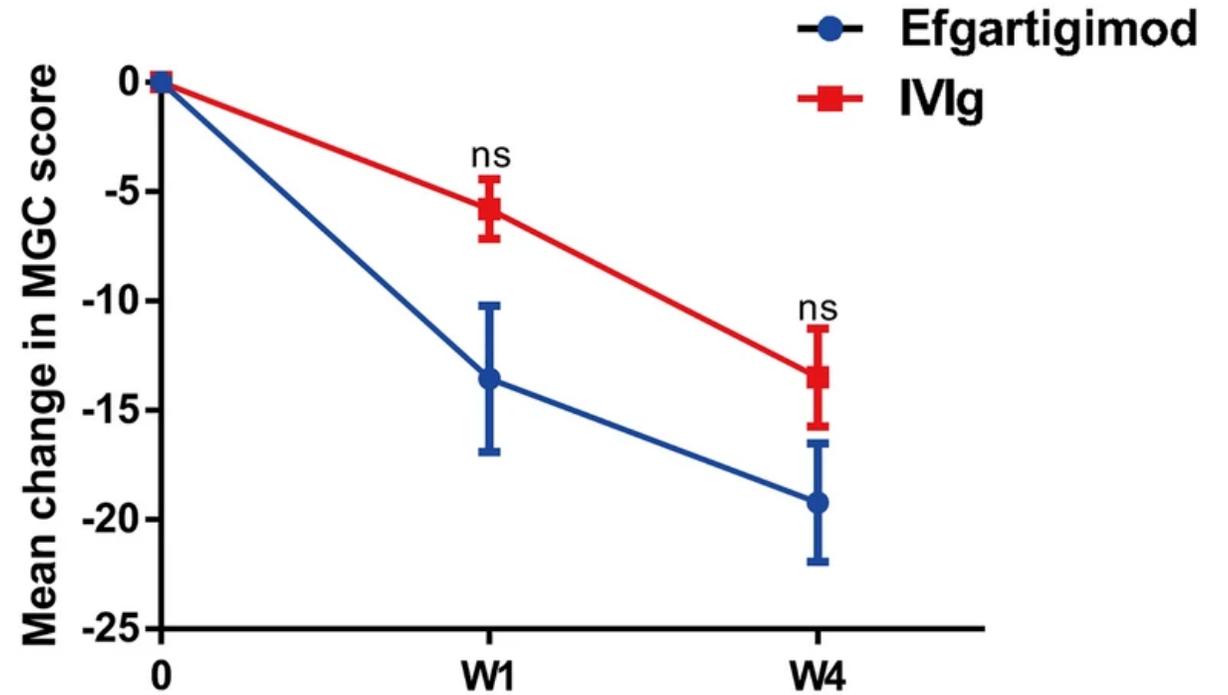


Efgartigimod versus IVIG in the treatment of patients with impending myasthenic crisis

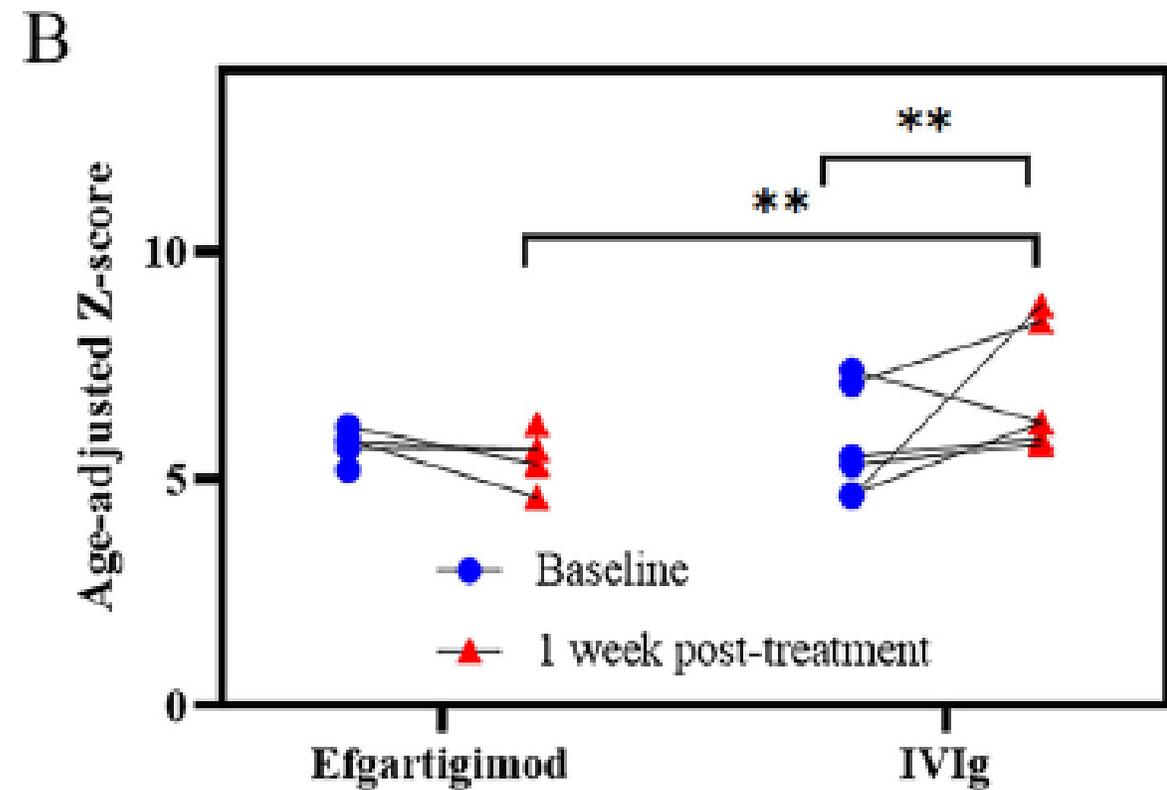
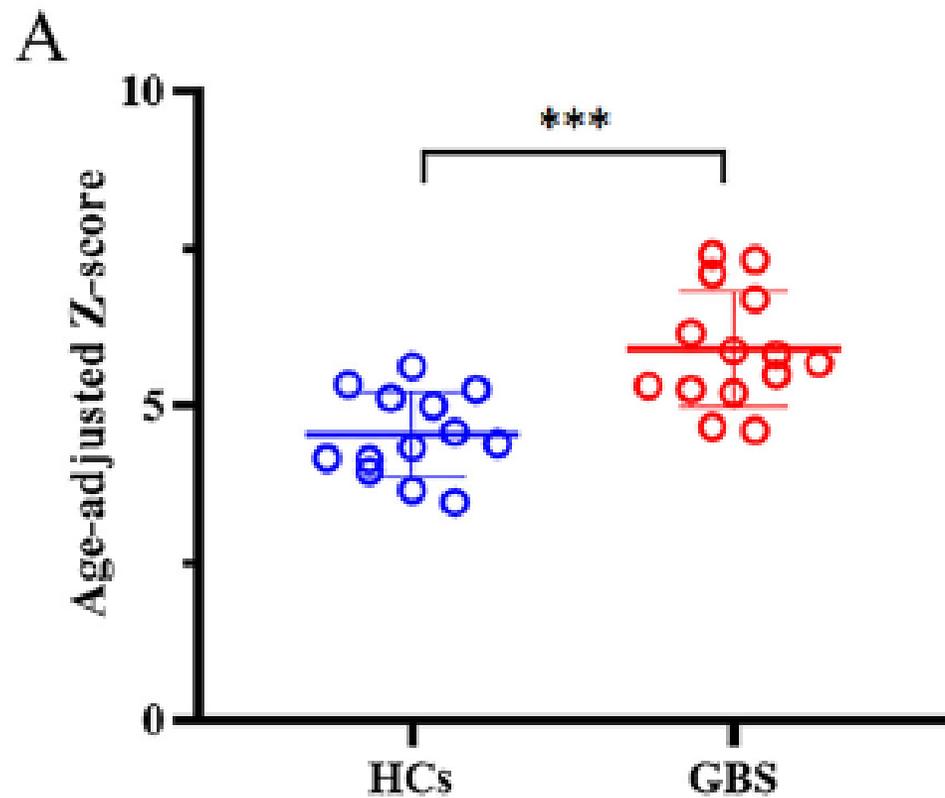
A



B



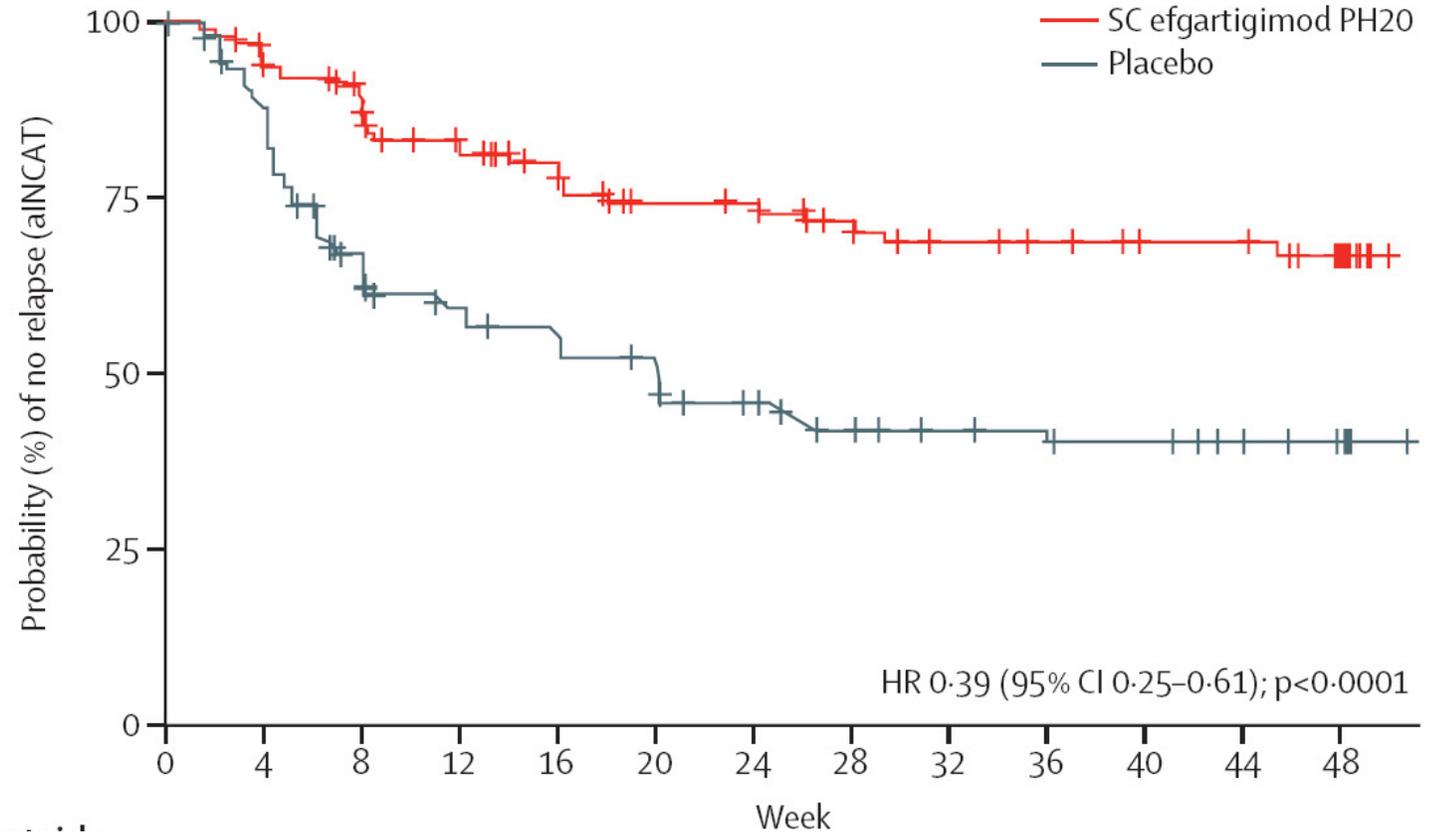
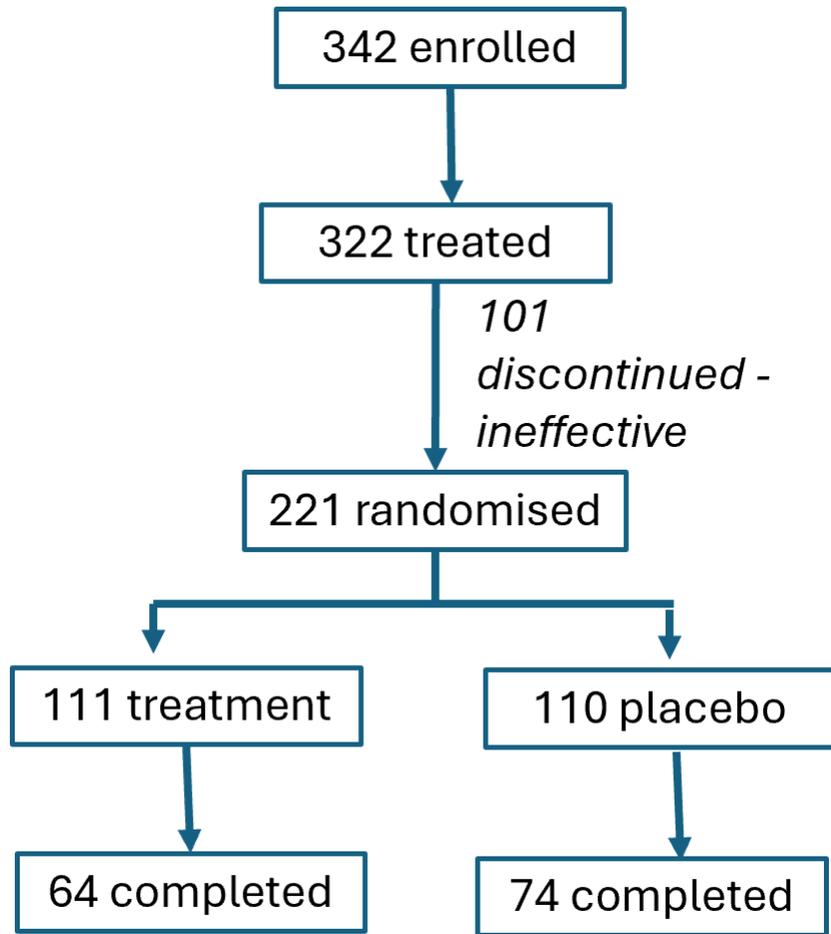
Comparison of intravenous efgartigimod and IVIG in GBS



ADHERE trial for S.C. Efgartigomod (Vyvgart) in CIDP

Relative risk of relapse based on time to first aINCAT deterioration

Trial design (simplified)



“ADHERE showed the efficacy of subcutaneous efgartigimod PH20 in reducing the risk of relapse versus placebo in people with CIDP who responded to treatment. Further studies are needed to provide data on the longer-term effects of efgartigimod alfa and how it compares with currently available treatment options.”

Regulatory status

FDA approves treatment for chronic inflammatory demyelinating polyneuropathy (CIDP) in adults

News & Events for Human Drugs

[Meetings, Conferences, & Workshops](#)

[Q&A with FDA Podcast](#)

[CDER Conversations](#)

[From Our Perspective](#)

Action

The U.S. Food and Drug Administration has approved Vyvgart Hytrulo (efgartigimod alfa and hyaluronidase-qvfc) for the treatment of chronic inflammatory demyelinating polyneuropathy (CIDP) in adults. Vyvgart Hytrulo is a combination of efgartigimod alfa, a neonatal Fc receptor blocker, and hyaluronidase, an endoglycosidase. Vyvgart Hytrulo was previously approved for the treatment of adults with generalized myasthenia gravis (gMG) who are anti-acetylcholine receptor (AChR) antibody positive.

For CIDP, Vyvgart Hytrulo is administered subcutaneously (under the skin) as weekly injections. The recommended dose is detailed in the [prescribing information](#).

Vyvgart

efgartigimod alfa

Medicine Human

Share RSS

Authorised

This medicine is authorised for use in the European Union



Overview

Vyvgart is a medicine for treating adults with:

- generalised myasthenia gravis (a disease that leads to muscle weakness and tiredness) and whose immune system (the body's defence system) produce antibodies against a protein called acetylcholine receptor, found on muscle cells. It is given together with other medicines used for the treatment of myasthenia gravis;
- chronic inflammatory demyelinating polyneuropathy (CIDP), a disease in which the immune system works abnormally and destroys the protective covering around the nerves. It is used in patients whose disease is worsening or came back and who have had previous treatment with corticosteroids or immunoglobulins (other medicines used to treat CIDP).

Myasthenia gravis and CIDP are rare, and Vyvgart was designated an 'orphan medicine' for these diseases on [21 March 2018](#) and [14 January 2022](#), respectively.

Vyvgart contains the [active substance](#) efgartigimod alfa

Page contents

Overview

[Product information](#)

[Product details](#)

[Authorisation details](#)

[Assessment history](#)

Moving beyond immunoglobulin therapy for CIDP with efgartigimod

Lünemann, J.D. Moving beyond immunoglobulin therapy for CIDP with efgartigimod. *Nat Rev Neurol* **21**, 1–2 (2025).

The design of the ADHERE trial, however, means that, despite the beneficial effects observed, translation into clinical practice will not be straightforward. The trial design had in-built pre-selection of individuals with active disease and a documented response to efgartigimod before the randomized controlled stage. This enrichment of participants with those whose disease responded to treatment ensured a streamlined design that was valuable given that responses to immunotherapy in CIDP are remarkably heterogeneous, and the approach was compatible with contemporary regulatory and expert consensus recommendations. In this context, however, ***the general approval of efgartigimod for treatment of CIDP given by the FDA means that a proportion of people with CIDP who receive efgartigimod in daily clinical practice are unlikely to experience meaningful benefits from the treatment.*** In the ADHERE trial, the onset of response was generally fast (25% responded within 2 weeks and 50% responded within 4 weeks), so ***efficient real-world use of efgartigimod will require rigorous clinical monitoring at the initiation of treatment as well as management of patients' expectations and development of a consensus on valid criteria to define a therapeutic response and criteria for discontinuation.***

Early deterioration of CIDP following transition from IVIG to FcRn inhibitor treatment (FIT)

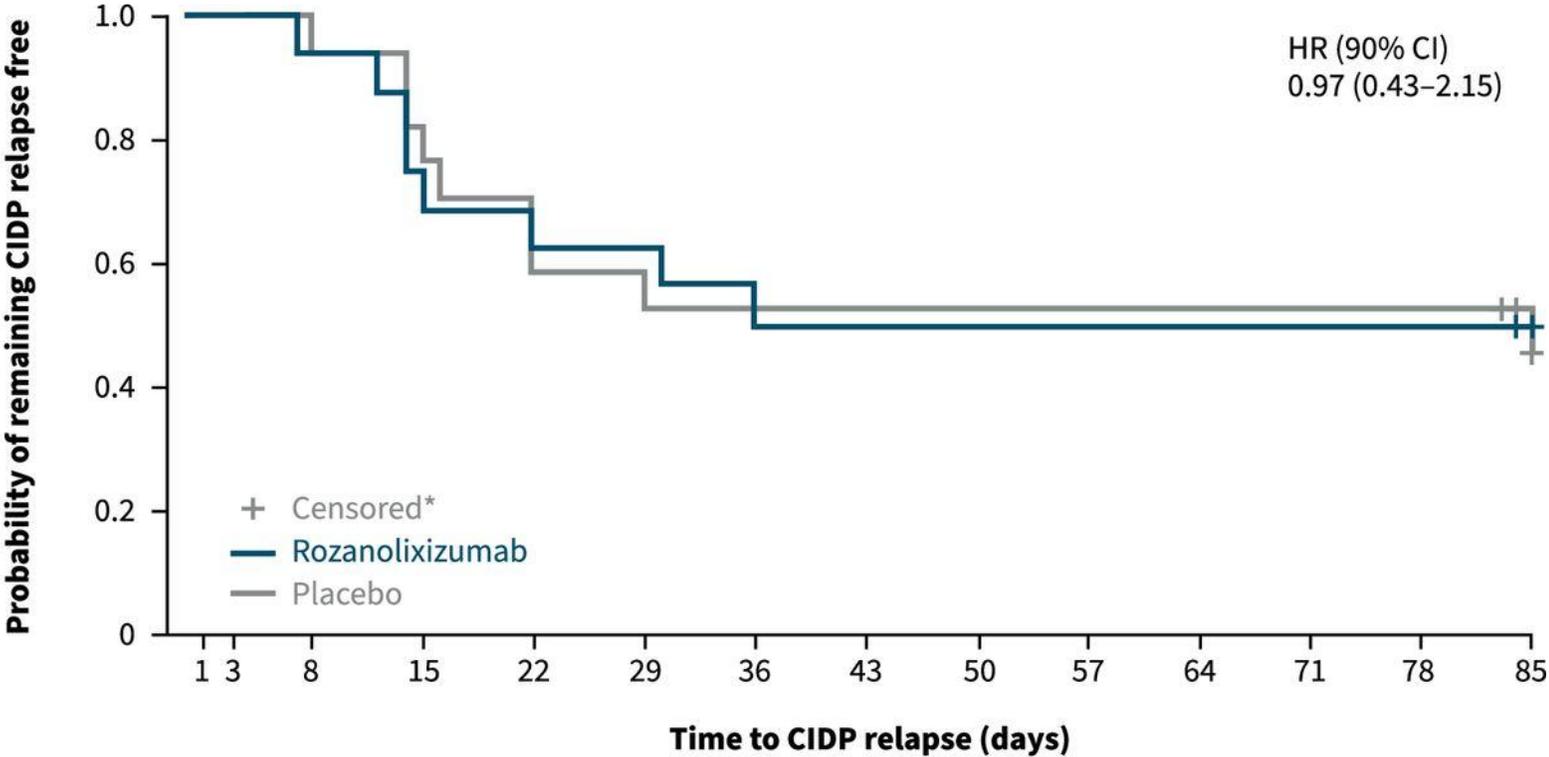
Clinical features including disability scores before and after FIT treatment and after rescue treatment

Pt	Age/ Sex	Disease Duration (months)	Disease Characteristic	Duration on IVIg (months)	INCAT at onset	INCAT on IVIg	INCAT after FIT	Rescue Treatment	Time on Rescue therapy	INCAT after rescue
1	68/F	36	Classic	12	5	2	7	Plex, IVIg, Pred	9 wks	3
2	74/M	84	Distal	84	4	1	6	IVIg	8 wks	3
3	58/F	180	Classic	120	8	2	4	Plex,IVIg, Pred	6 wks	5
4	47/F	60	Multifocal	48	5	2	6	IVIg, Pred	5 wks	4

“.....the transition from IVIG to efgartigimod in a real world setting was not studied in the pivotal trial. We have treated nine patients with FIT in our practice and report findings of four of those patients who had severe relapse of CIDP after treatment. Five of the other patients neither improved nor declined with FIT. This raises questions about the issues related to transitioning patients from IVIG to efgartigimod..... the transition of patients with CIDP who are stable on IVIG therapy to FIT can lead to severe worsening of disease ”

The report,,,, highlights critical safety concerns about transitioning patients from immunoglobulin therapy to efgartigimod..... A post-hoc analysis examining recognizable subsets.....is needed to improve diagnostic precision and strengthen confidence in efgartigimod's role in CIDP. Addressing these issues will only ensure that both patients and clinicians benefit from a clearer, more accurate understanding of promising therapies.

Randomised double blind Phase 2a trial of rozanolixizumab in patients with CIDP



FDA and EMA approval for MG BUT seems ineffective for CIDP

Johnson & Johnson



Johnson & Johnson receives FDA approval for IMAAVY™ (nipocalimab-aahu), a new FcRn blocker offering long-lasting disease control in the broadest population of people living with generalized myasthenia gravis (gMG)

ClinicalTrials.gov

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Home Search Results Study Record



The U.S. government does not review or approve the safety and science of all studies listed on this website.

Read our full disclaimer for details.

Recruiting

Efficacy and Safety Study of Nipocalimab for Adults With Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)

ClinicalTrials.gov ID NCT05327114

Sponsor Janssen Research & Development, LLC

Information provided by Janssen Research & Development, LLC (Responsible Party)

Last Update Posted 2025-11-07



ABOUT US OUR SCIENCE PATIENTS & CAREGIVERS FOR INVESTORS

OVERVIEW NEWS & EVENTS COMPANY INFO FINANCIALS STOCK DATA SEC FILINGS GOVERNANCE

IMMUNOVANT ANNOUNCES POSITIVE RESULTS FOR BATOCLIMAB MYASTHENIA GRAVIS (MG) AND CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY (CIDP) STUDIES

March 19, 2025 7:45 am EDT

Download as PDF

- Pivotal study in MG met primary endpoint of change from baseline in MG-ADL in CIDP population at 12 weeks, with a 5.6 point improvement in the higher dose arm (with 74% mean IgG reduction) and a 4.7 point improvement in the lower dose arm (with 64% mean IgG reduction)
Initial CIDP results from Period 1, following standard of care washout, demonstrate a mean improvement in the adjusted INCAT disability score of 1.8 across batoclimab arms and an 84% responder rate in those patients who achieved an IgG lowering greater than 70%

Read our full disclaimer for details.

Active, not recruiting

To Assess Efficacy and Safety of Batoclimab in Adult Participants With Active CIDP

ClinicalTrials.gov ID NCT05581199

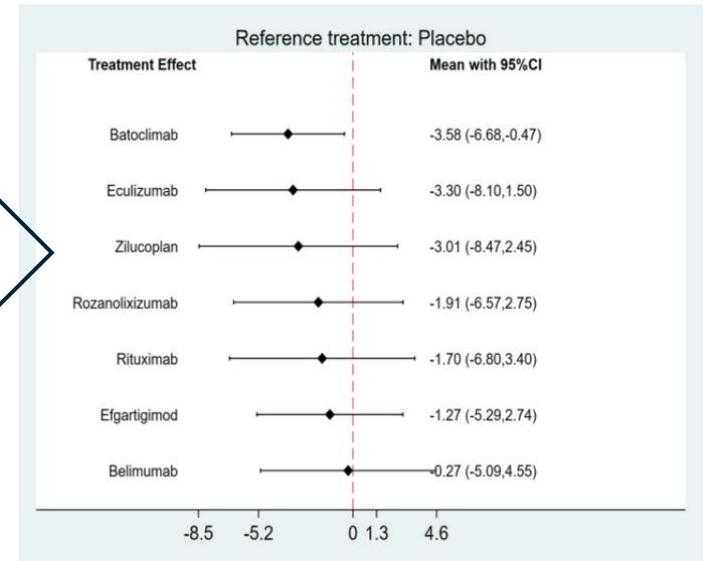
Sponsor Immunovant Sciences GmbH

Information provided by Immunovant Sciences GmbH (Responsible Party)

Last Update Posted 2024-11-25

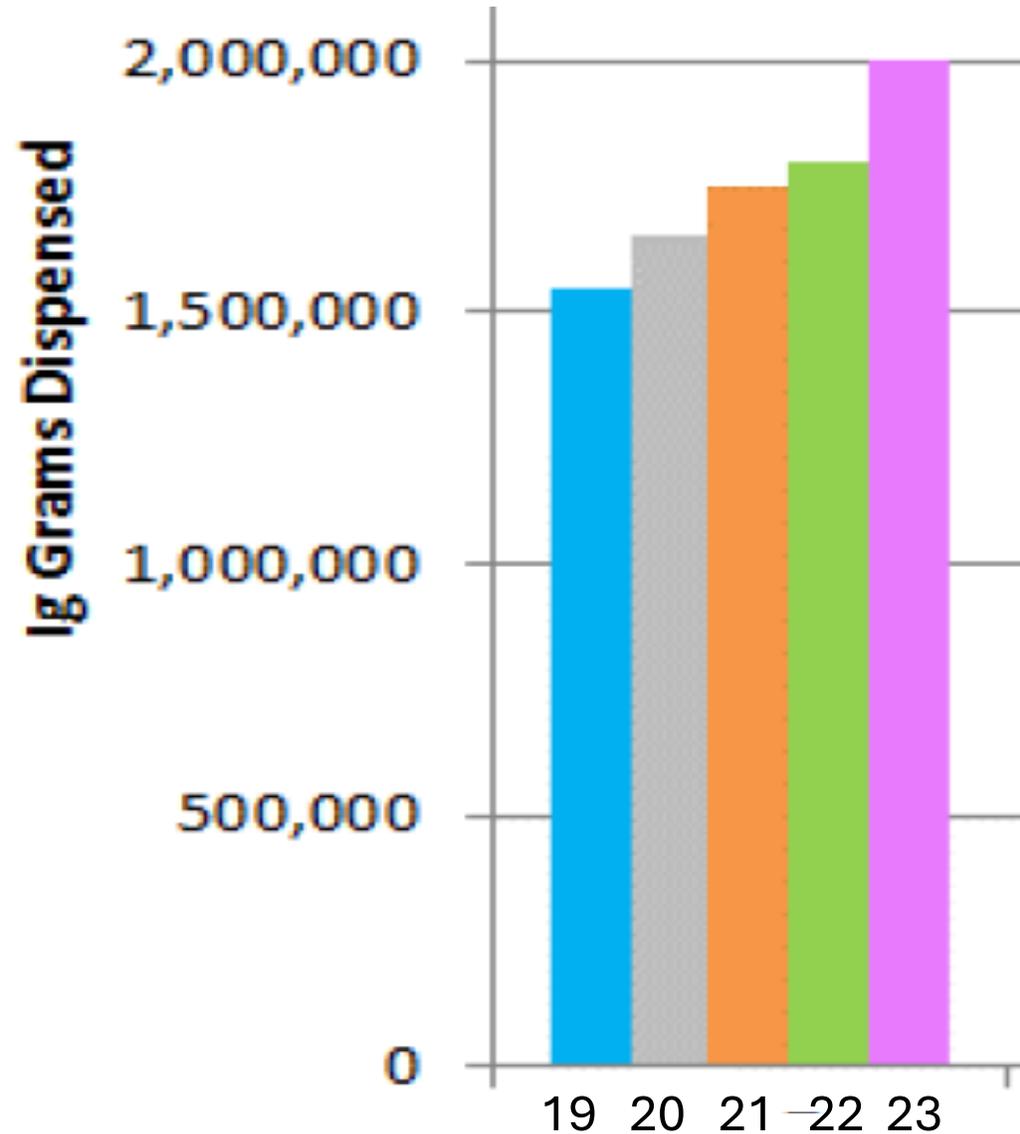
At present, Immunovant does not intend to seek regulatory approval for batoclimab in MG or CIDP... WHY NOT?

RANKING IN MGC SCORE



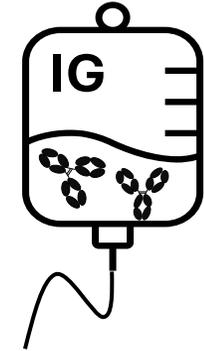
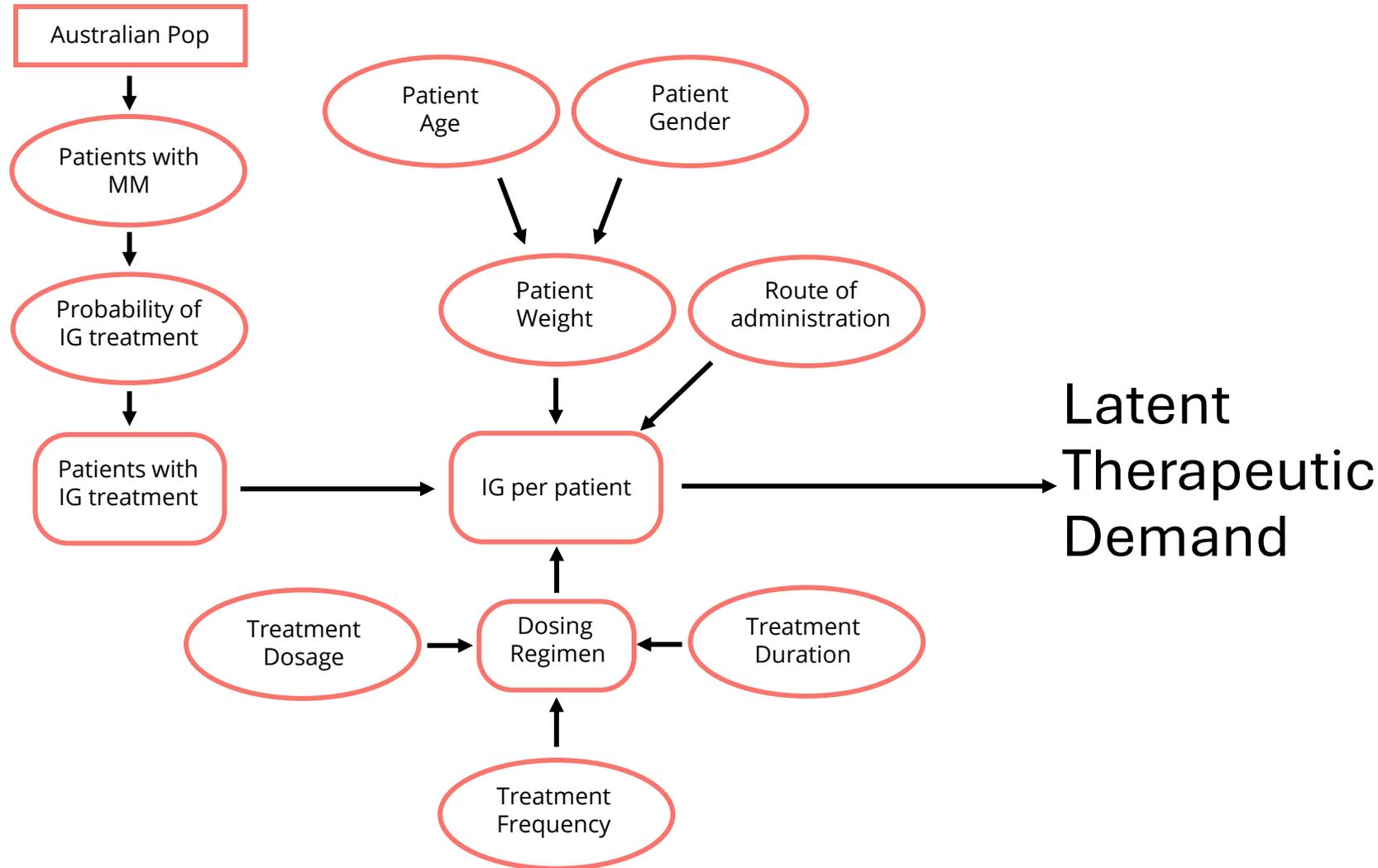
IG issues – Australia - Acquired hypogammaglobulinaemia —

“haematological malignancy and post haemopoietic stem cell transplantation (HSCT)”



**THE HIGHEST
USING
GROUP OF
INDICATIONS
IN
AUSTRALIA**

Modelling the LTD for IG in Multiple Myeloma in Australia



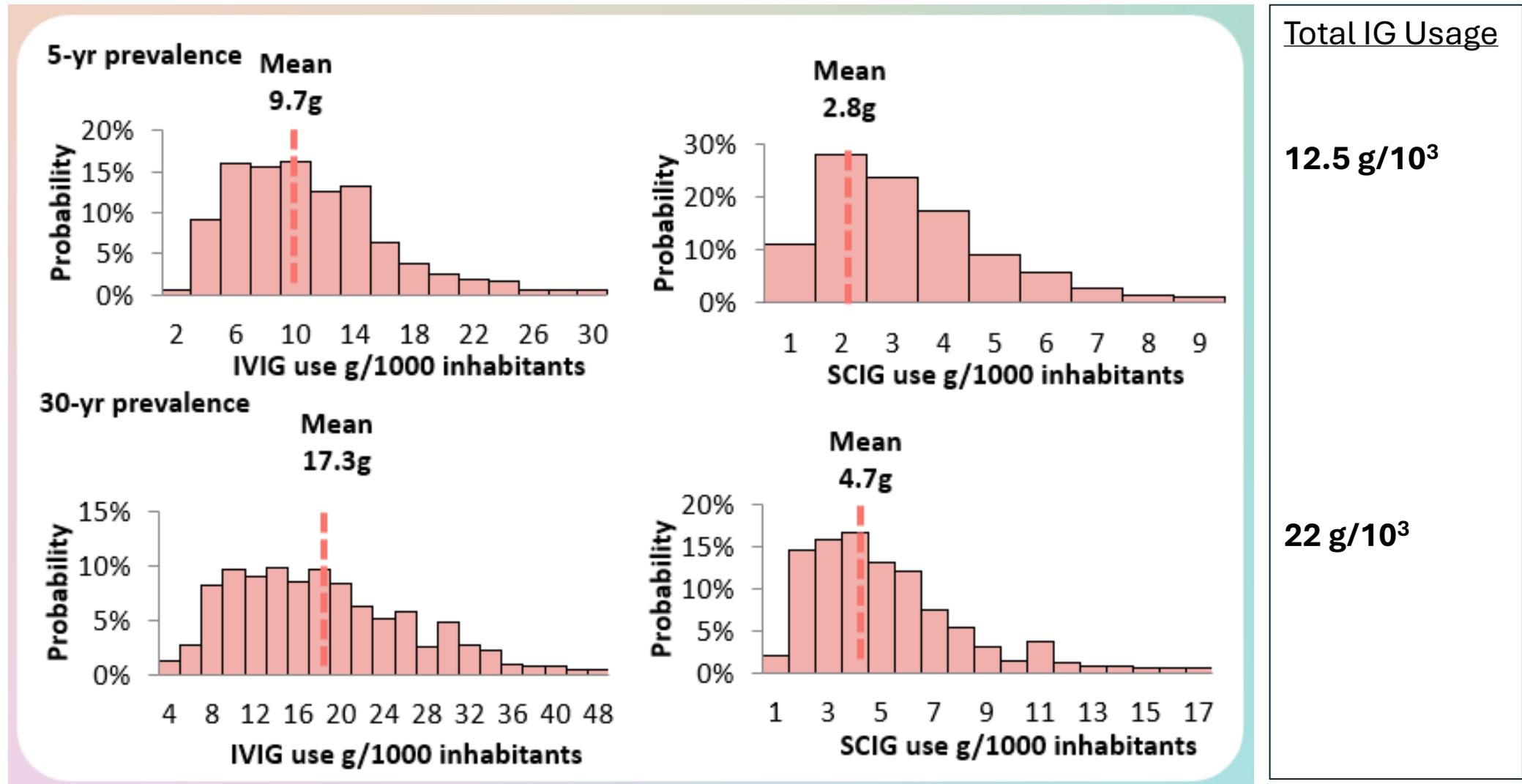
Base case estimate

1. 5yr prevalence
17g / 1000 inhabitants

2. 30yr prevalence
28g / 1000 inhabitants

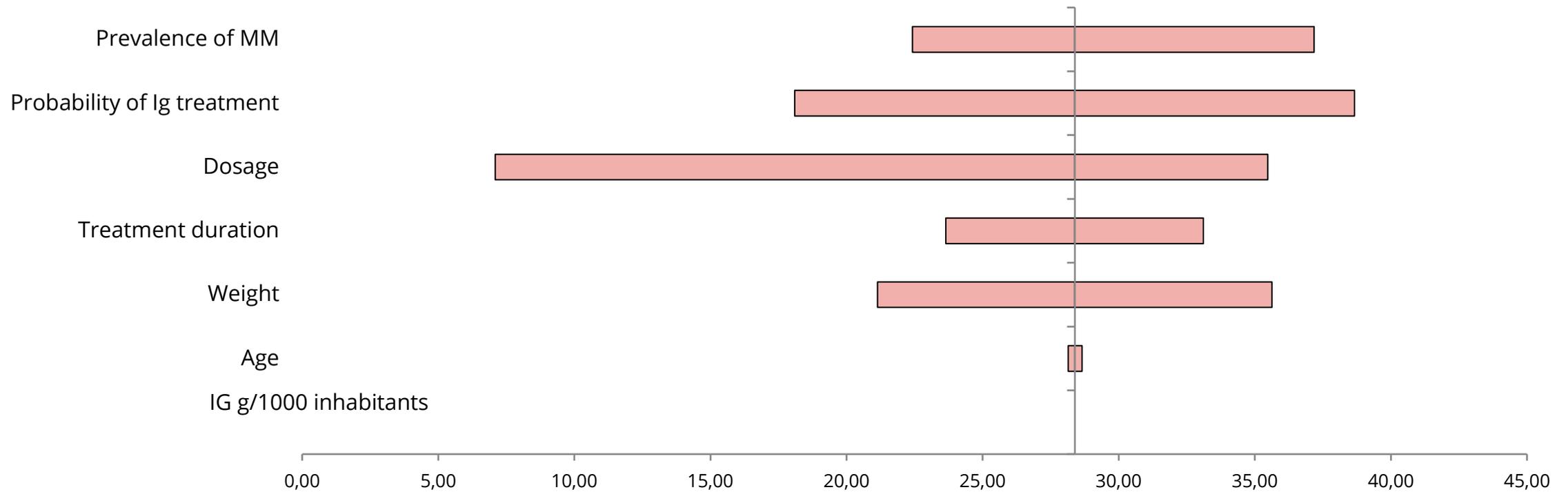
Actual usage (2023-4)
23g / 1000 inhabitants

Current usage (23g) is comparable to what is estimated for a 30-yr prevalence LTD (22 g)



Modelling the LTD for IG in Multiple Myeloma in Australia

One-way sensitivity analysis





Jo Das
Senior Research Advisor
The University of Western Australia
Office of Research
Perth WA 6009

Dear Jo Das

NATIONAL BLOOD SECTOR RESEARCH AND DEVELOPMENT GRANT

Thank you for the application in response to our request for submissions for a National Blood Sector Research and Development Grant.

After careful evaluation of all responses received, I am pleased to inform you that the submission by Prof Albert Farrugia from the University of Western Australia for a Project Grant titled '**Estimation and application of the latent therapeutic demand for immunoglobulin therapy in acquired and secondary immunodeficiencies in Australia**' has been successful.

Please provide your formal acceptance of this offer by email. If we have not received your acceptance by 5 February 2026, this offer will expire.

We will commence work with you to complete a Grant Funding Agreement once we receive your response.

Please note that this offer is being provided under embargo. Grants will only be awarded following successful negotiation and approval of funding agreement by all parties. Details of the Grant Funding Agreement will not be published on the National Blood Authority website until after the agreement has been executed. Therefore, you are required to maintain confidentiality until such time as the embargo has been lifted.

If you have any queries, please contact the Research and Development Officer via



Accessibility: Investigate



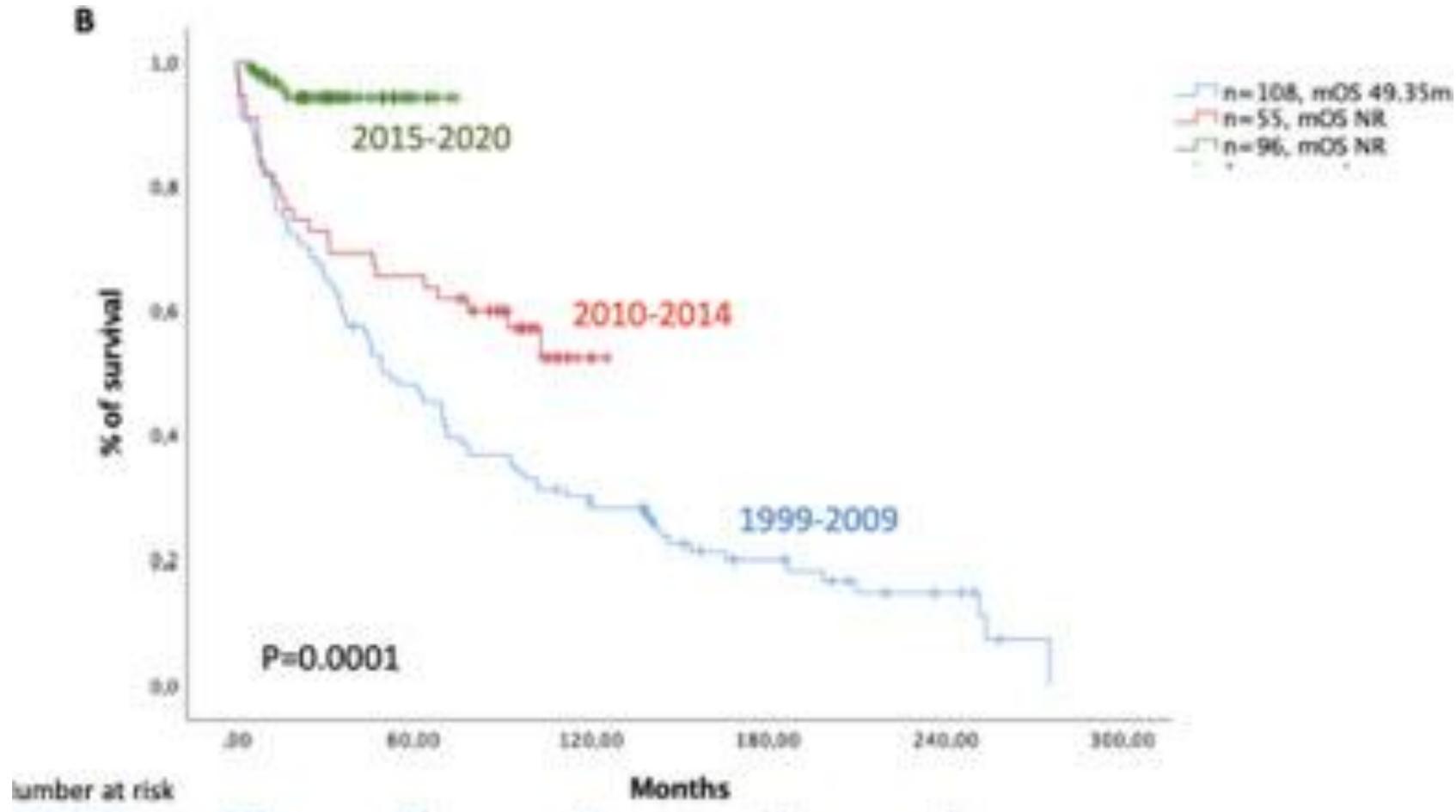
Variation in immunoglobulin use and impact on survival in myeloma

Parameter	Hazard Ratio	95% CI	P
Baseline hypogammaglobulinaemia (<7.0 g/L)	1.02	0.83 – 1.25	
Baseline severe hypogammaglobulinaemia (<4.0 g/L)	1.03	0.82 – 1.3	
Use of immunoglobulin	0.73	0.46 – 1.16	0.16
Use of immunoglobulin with baseline hypogammaglobulinaemia	0.80	0.39 – 1.63	0.54
Use of immunoglobulin with severe baseline hypogammaglobulinaemia	0.91	0.40 – 2.10	0.83
Use of immunoglobulin – infection-related death	1.30	0.50 – 3.30	
Use of immunoglobulin – progression-free survival	0.85	0.57 – 1.28	

N
B

Survival in multiple myeloma

Patients <65 years old



Rapidly emerging therapies for multiple myeloma (and other cancers)

1. Biphasic Mc Abs

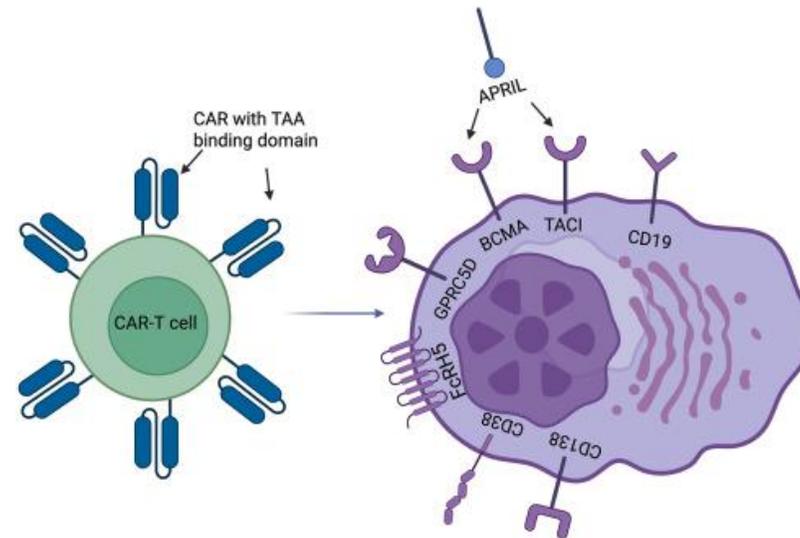
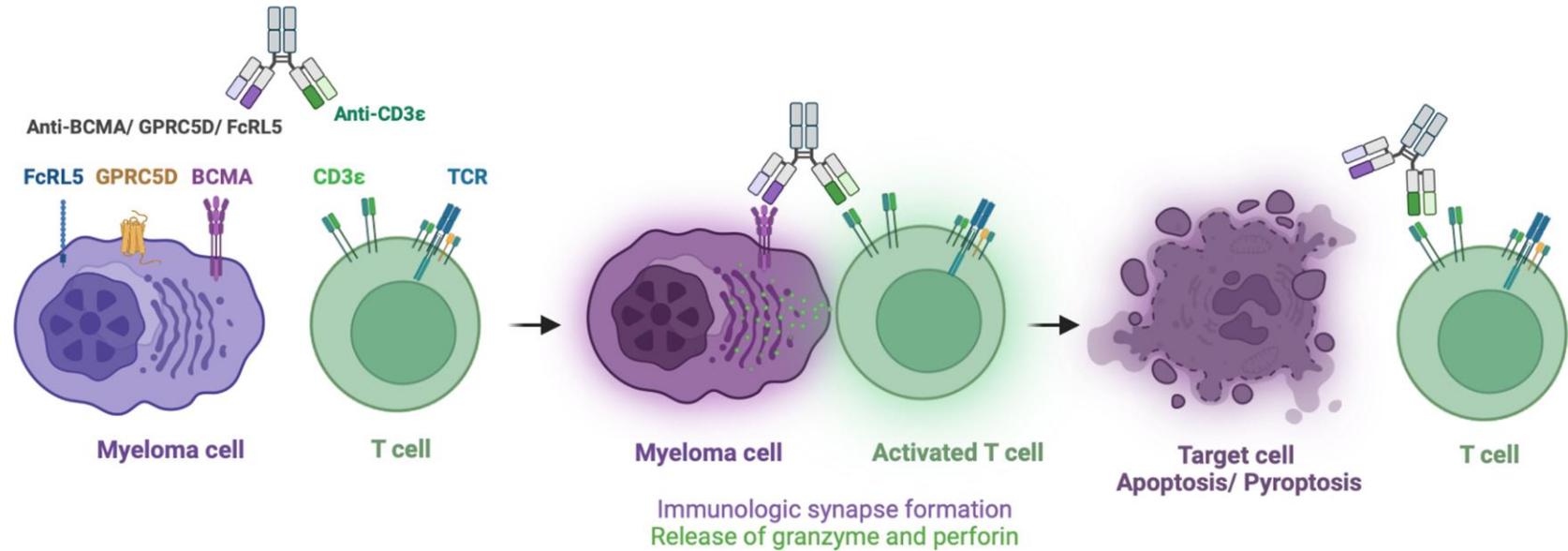
Hematology Am Soc Hematol Educ Program
2023; 2023 (1): 332–339. doi:
<https://doi.org/10.1182/hematology.202300043>

- Teclistamab (TECVAYLI), approved in October 2022
- Elranatamab (ELREXFIO), approved in August 2023
- Talquetamab (TALVEY), approved in August 2023
- Linvoseltamab (LYNOZYFIC), approved in July 2025.

2. CAR T cell therapies

Best Practice & Research Clinical Haematology,
Volume 38, Issue 4, 2025,
<https://doi.org/10.1016/j.beha.2025.101659>

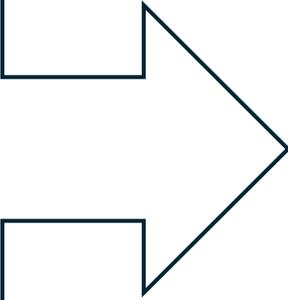
Idecabtagene vicleucel and
Ciltacabtagene autoleucel
approved by FDA



Multiple Myeloma Meeting, Melbourne 21/11/2025

MYELOMA IN PRACTICE

The changing landscape of supportive care medication in myeloma

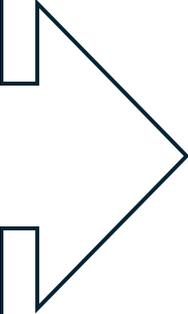


Anti-infective prophylaxis

Viral prophylaxis:
Valaciclovir: HSV: 500 mg orally daily; VZV: 500 mg orally TWICE daily
Aciclovir: HSV: 400 mg to 800 mg orally TWICE daily; VZV: 800 mg orally TWICE daily
-Our institution, HSV+VZV covered

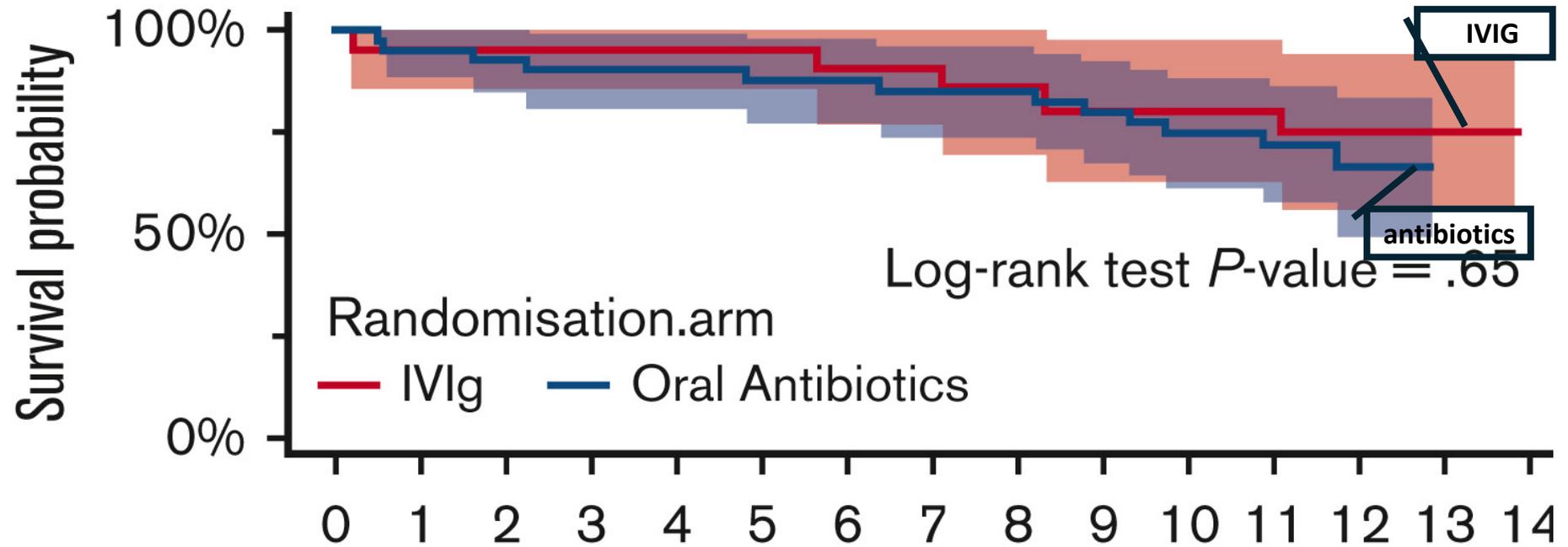
PJP Prophylaxis:
1st line: co-trimoxazole
2nd line: dapsone
3rd line: pentamidine or atovaquone
Use will depend on treatment

Fungal prophylaxis:
Fluconazole 400mg daily for neutropenic period
Melphalan ASCT, DT-PACE or DCEP



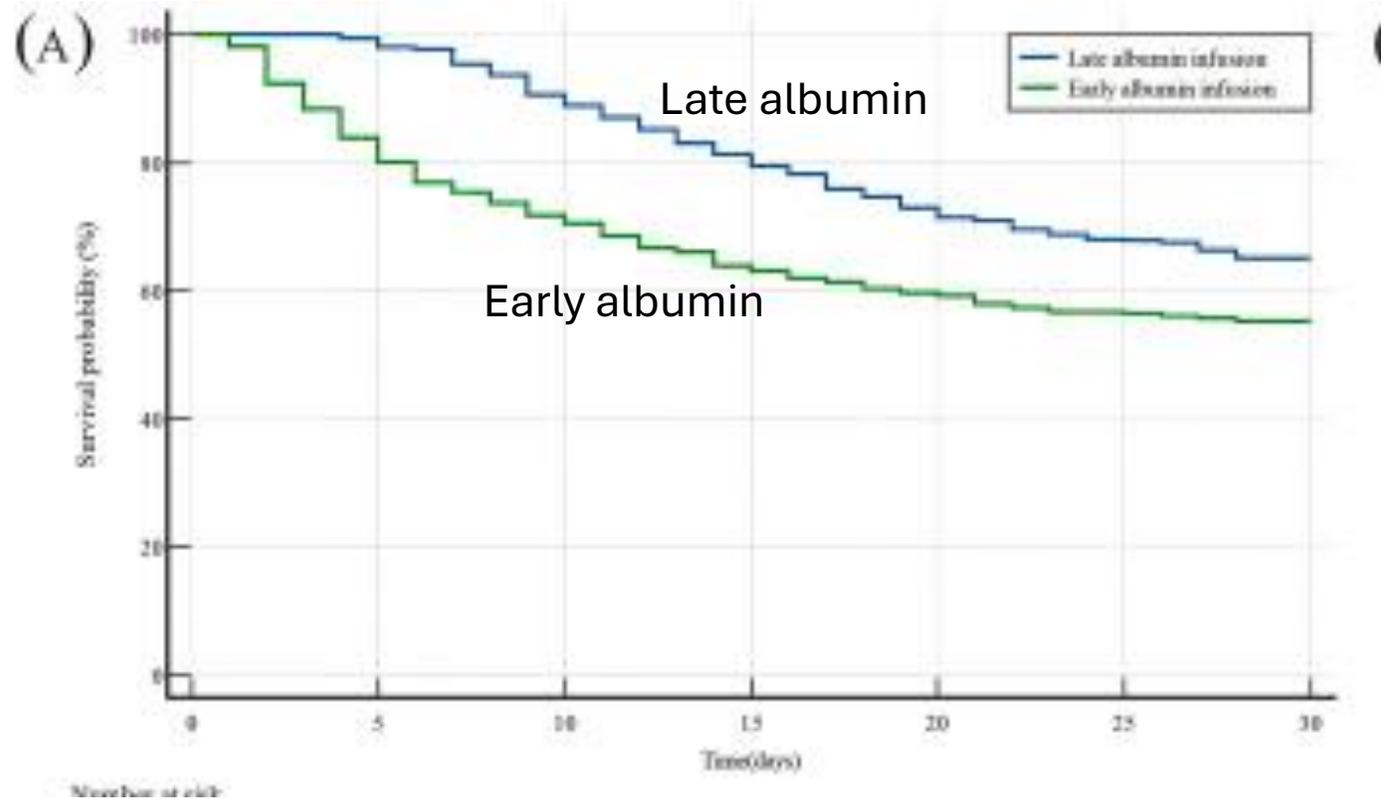
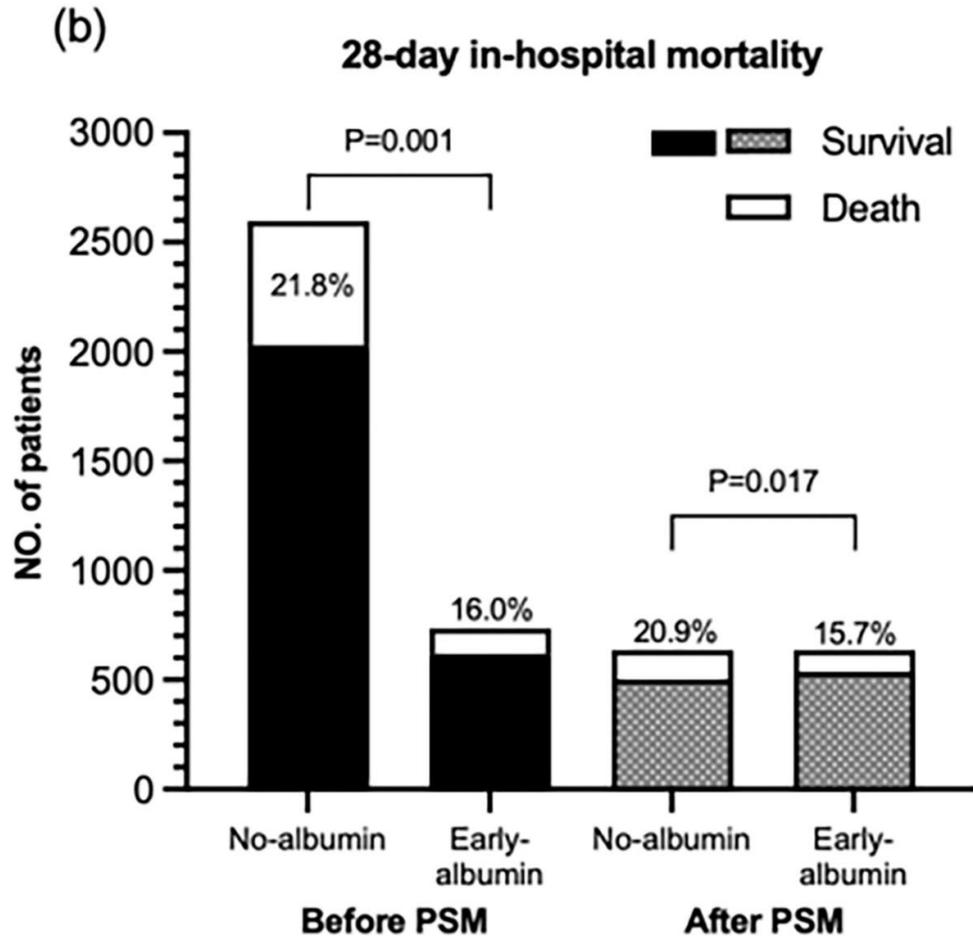
IG ?

Immunoglobulin replacement vs prophylactic antibiotics for hypogammaglobulinemia secondary to hematological malignancy

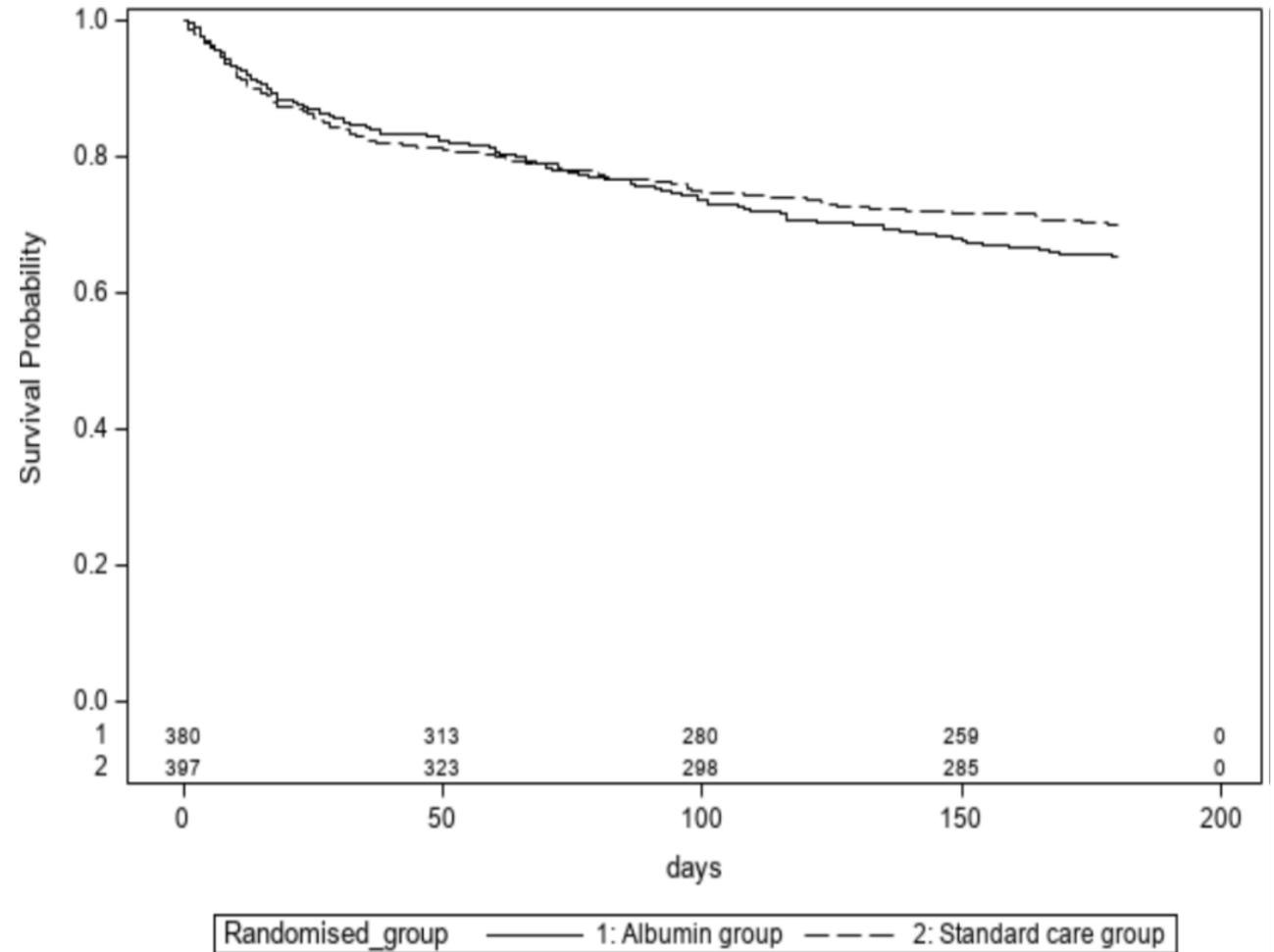
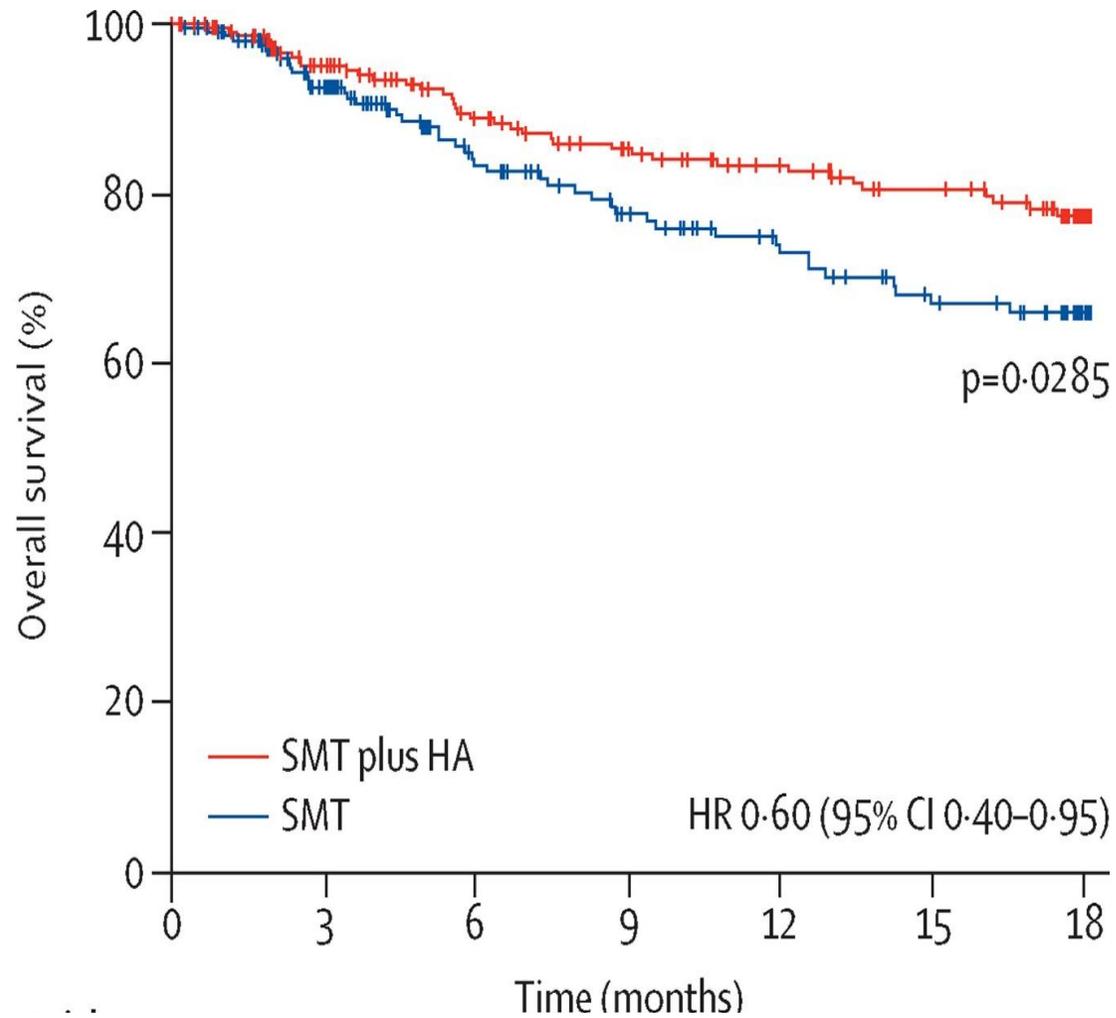


Time to first major infection based on the treatment arm

Albumin in sepsis – Still in equipoise



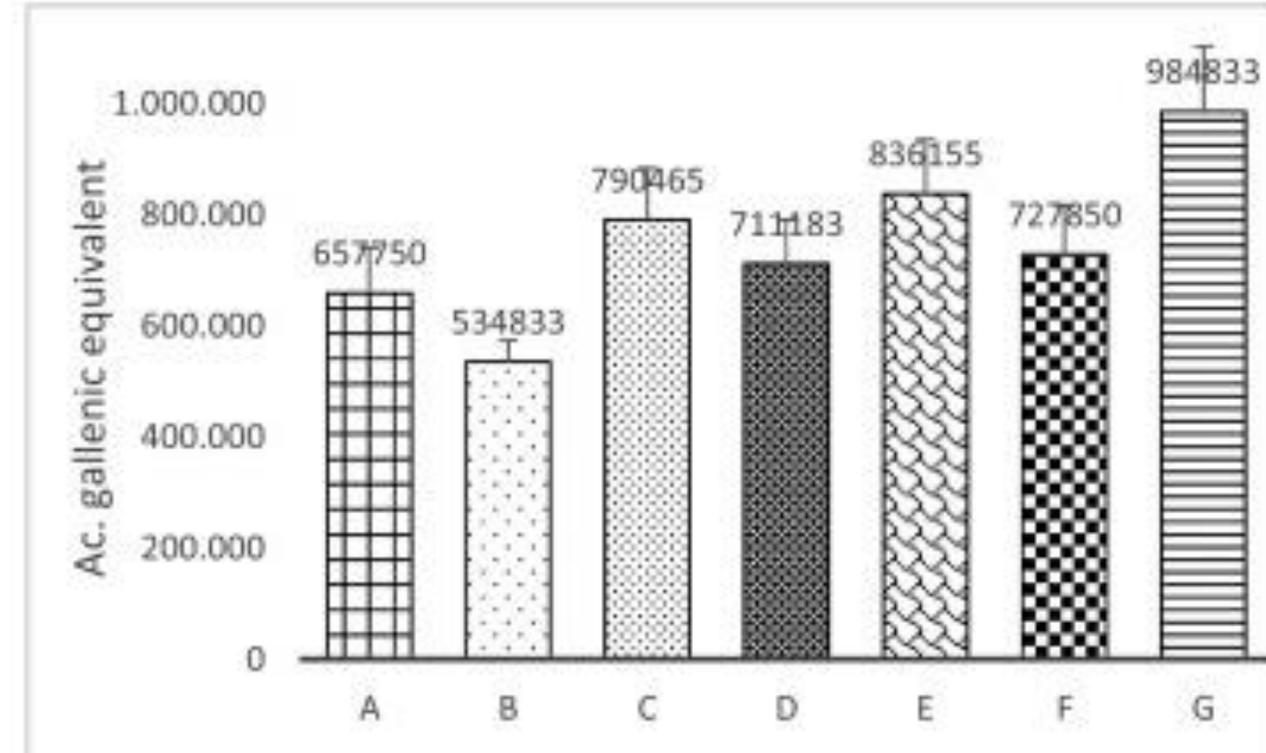
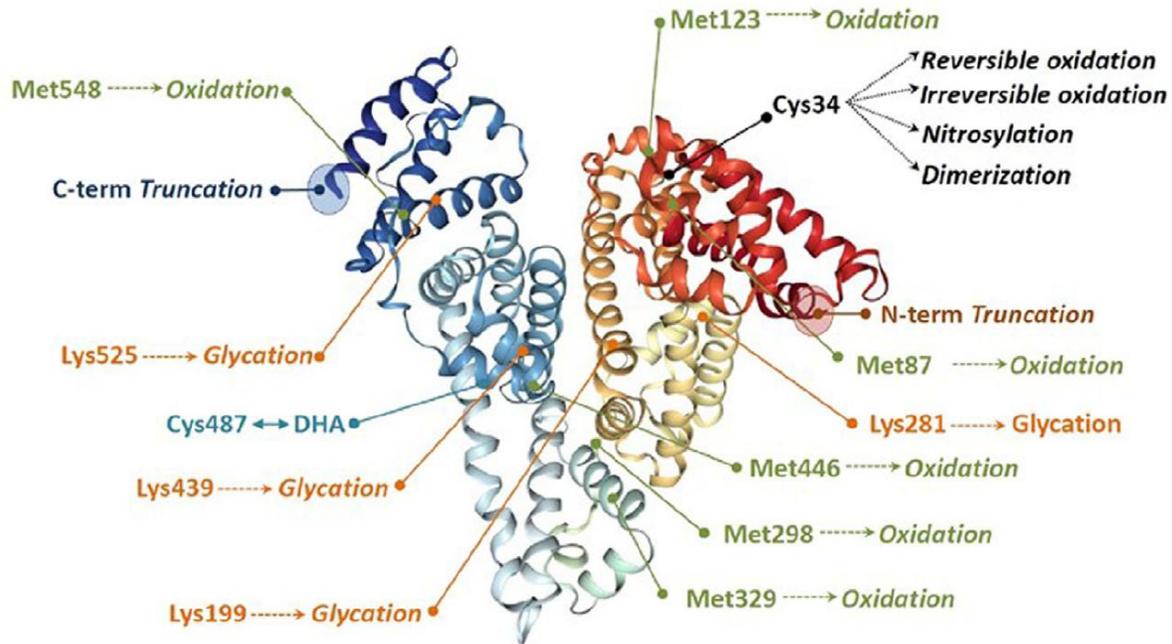
Albumin in decompensated cirrhosis – Conflicting studies



The Lancet, Volume 391, Issue 10138, 2417 - 2429

N Engl J Med 2021;384:808-817

Not all albumins are equal



Alterations in the albumin molecule decreasing efficacy in circulating albumin and albumin products

Antioxidant activity of different commercial albumin solutions

Naldi et al Structural and functional integrity of human serum albumin: Analytical approaches and clinical relevance in patients with liver cirrhosis, *Journal of Pharmaceutical and Biomedical Analysis*, Volume 144, 2017, Pages 138-153,

Mori et al Post-translational modifications and antioxidant properties of different therapeutic human serum albumins, *International Journal of Biological Macromolecules*, Volume 183, 2021, Pages 927-935,

A call to arms

We need to

- Understand the indications
- Generate evidence for usage, dosage...
- Optimise procurement processes
- Ensure appropriate standards
- Examine and encourage alternatives

Through

➤ FOLLOWING THE DATA

➤ IGNORING POPULISIM

⊗ “MORE PLASMA”

⊗ “OFF LABEL USE”

⊗ ETC ETC

➤ PRACTICING EVIDENCE

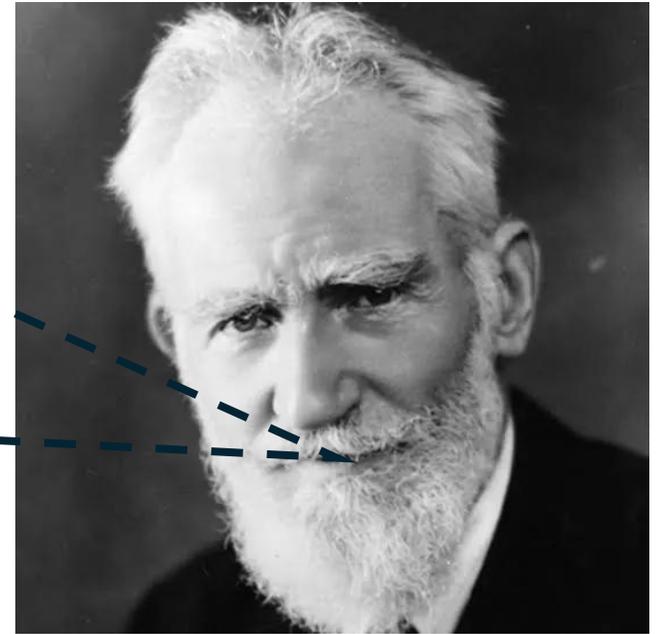
BASED MEDICINE

➤ EFFICACY IS NOT

EFFECTIVENESS

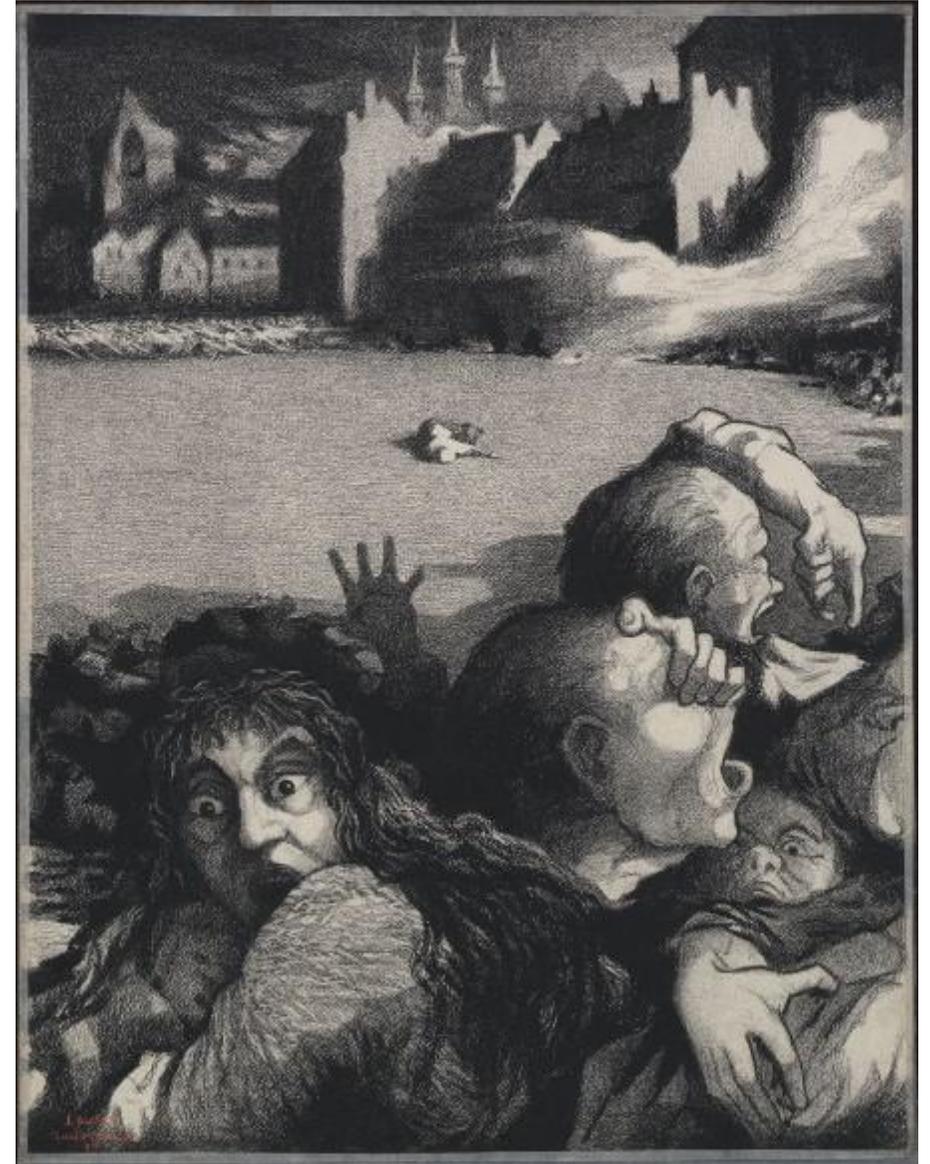
**None
of
this
is
easy
–
BUT**

***"Life is not
meant to
be easy,
my child;
but take
courage:
it can be
delightful."***



This talk is dedicated to the memory of the 248 citizens of Leuven, who, on the 25th of August 1914, were murdered by the soldiers of a neighbouring and more powerful nation, led by an autocratic megalomaniac, which twice in the last century, invaded Belgium in breach of international treaties. They sacked the town and burned down the historic library.

Any similarities to ongoing events are entirely intentional.



Louvain, by Belgian artist Gisbert Combaz (1916)