australasian society of clinical immunology and allergy

Submission to Parliamentary Inquiry: New Drugs and Novel Medical Technologies

Submitted 3rd November 2020

CONTENT

If there are any queries regarding this submission or the ASCIA Immunodeficiency Strategy for Australia and New Zealand contact the ASCIA CEO, Jill Smith by emailing jill@allergy.org.au

The Australasian Society of Clinical Immunology and Allergy (ASCIA) is the peak professional body of clinical immunology/allergy specialists in Australia and New Zealand.

ASCIA is a Company limited by guarantee (ACN 608 798 241; ABN 45 615 521 452) and a Specialty Society affiliated with the Royal Australasian College of Physicians (RACP).

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INTRODUCTION

The Australasian Society of Clinical Immunology and Allergy (ASCIA) welcomes the opportunity to lodge this submission in response to the House of Representatives Standing Committee for Health, Aged Care and Sport Parliamentary Inquiry into new drugs and novel medical technologies. We note that this Inquiry includes a particular focus on access to the treatment of **rare diseases and conditions** where there are high and unmet clinical needs.

ASCIA is the peak professional body of clinical immunology/allergy specialists, who manage patients in Australia and New Zealand with **rare conditions known as primary immunodeficiencies (PIDs).**

ASCIA has worked in collaboration with patient organisations (AusPIPs Inc, HAE Australasia, IDFA and IDFNZ) and other stakeholders to develop the first ASCIA Immunodeficiency Strategy at a national level for Australia and New Zealand, which highlights a range of issues and unmet clinical needs. It was completed in October 2020 and is available at www.nationalimmunodeficiencystrategy.org.au/

This submission is based on the following five issues that have been identified as a result of developing the ASCIA Immunodeficiency Strategy, which are relevant to the Inquiry Terms of Reference.

- **Newborn screening for early diagnosis of severe PID**
- **Early diagnosis of other PIDs**
- **Improved access to genomic and immune testing for PID**
- **Improved access to funded and supported PID treatments**
- **Support for PID research and collaborations**

Novel medical technologies and treatments are vital for the early diagnosis and prompt specialist management of PIDs, resulting in profound benefits. With world leading PID medical, research and development expertise, Australia is uniquely placed to play a leading role in this area.

We note that the Committee prefers that submissions are made public, and we approve for all of the ASCIA submission, including the attachment, to be made public by the Committee.

We trust that the ASCIA submission will be given due consideration in this Parliamentary Inquiry into new drugs and novel medical technologies, and we look forward to your response.

Development of this submission and the ASCIA Immunodeficiency Strategy was coordinated by Jill Smith, ASCIA CEO, and led by the following ASCIA members:

- Professor Michaela Lucas (WA): ASCIA President (2020-2022)
- Dr Theresa Cole (VIC): ASCIA President Elect (2020-2022), and Chair, ASCIA Immunodeficiency committee
- Associate Professor Jane Peake (QLD): ASCIA Director (2020-2022)
- Dr Michael O'Sullivan (WA): ASCIA Director (2020-2022)
- Dr Melanie Wong (NSW): Co-chair, ASCIA Immunodeficiency Strategy and past ASCIA President
- Professor Jo Douglass (VIC): Co-chair, ASCIA Immunodeficiency Strategy and past ASCIA President
- Dr Jan Sinclair (NZ): Chair, Immunology/Allergy joint training committee
- Professor Connie Katelaris AM (NSW): Chair, ASCIA HAE working party and past ASCIA President

ABOUT PRIMARY IMMUNODEFICIENCIES (PIDs)

Primary Immunodeficiencies (PIDs) are a diverse group of more than 400 potentially serious, chronic illnesses due to inherited absence or dysregulation of parts of the immune system. Symptoms often appear in childhood, but many can first occur in adult life. PIDs can lead to reduced quality of life and life expectancy due to recurrent, chronic or severe infections, swellings, autoimmune and inflammatory problems and are a significant health burden.

Individual PIDs are rare, including many with only a few patients identified in the world, whilst the more common PIDs affect between 1 in 10,000 and 1 in 1,000,000 people. However, taken together, the prevalence of PIDs is overall estimated to be 1 in 1,000 people.

There are six main types of PIDs that affect the immune system in different ways:

- **Predominantly antibody deficiencies** e.g. common variable immunodeficiency (CVID)
- **Combined immunodeficiencies** e.g. severe combined immunodeficiency (SCID)
- **Phagocytic cell deficiencies** e.g. chronic granulomatous disease (CGD)
- **Immune dysregulation** e.g. autoimmune lymphoproliferative syndrome (ALPS)
- **Autoinflammatory disorders** e.g. familial Mediterranean fever (FMF)
- **Complement deficiencies** e.g. hereditary angioedema (HAE)

Note: A published classification of conditions which cause PIDs has been developed by the International Union of Immunological Societies (IUIS), which is regularly modified. The current version divides PIDs into nine categories and refers to PIDs as Inborn Errors of Immunity. For the purposes of this document, the more readily recognised term of primary immunodeficiencies (PIDs) is used.

Research and advances in therapies have resulted in improved health and a longer life for people with PIDs and there are currently six main types of treatment options:

- **Antibiotics**
- **Immunoglobulin Replacement Therapy (IRT**) - subcutaneous (SCIg) or intravenous (IVIg)
- **Immunomodulation** – including biologics
- **Hereditary Angioedema (HAE) Treatments**
- **Haematopoietic Stem Cell Transplantation (HSCT)**
- **Gene Therapy**

For further information about types of PIDs and treatments refer to Appendices A and B in the ASCIA Immunodeficiency Strategy for Australia and New Zealand.

EARLY DIAGNOSIS AND SPECIALIST TREATMENT OF PID ENABLES PROFOUND BENEFITS

Due to their rarity, delays in diagnosis of PIDs are common, which is associated with further complications and reduced survival rates.

For infants and very young children with severe PIDs, diagnostic delay leads to severe complications due to infections and early death. Early diagnosis is vital to allow curative treatment such as urgent haematopoietic stem cell transplantation (HSCT), also known as bone marrow transplant (BMT). For older children and adults where curative treatment is not possible, delay in diagnosis is associated with reduced life expectancy.

With targeted resources, patients with PID can be spared unnecessary interventions and instead utilise available medical treatments to maximise their opportunities to lead productive and healthy lives.

PID ISSUES – SUMMARY

NEWBORN SCREENING FOR EARLY DIAGNOSIS OF SEVERE PID

Goal: Enable early diagnosis of severe combined immunodeficiency (SCID) by newborn screening of the Australian population.

- SCID is fatal in the first two years of life without definitive intervention.
- For infants with SCID to survive, urgent haematopoietic stem cell transplantation (HSCT), also known as bone marrow transplant (BMT), is required.
- Early diagnosis is vital to allow curative treatment such as urgent HSCT.
- Newborn screening (NBS) for SCID allows early HSCT, with better outcomes in younger infants,
- A reliable NBS test is available for SCID based on proven technology.

SCID NBS is NOT yet routinely available in Australia. SCID NBS is currently routinely performed in New Zealand, the United States, and in some European countries, and on a trial basis in all infants born in NSW, from 2018 to 2022.

SUGGESTED SOLUTION

- Implement newborn screening of the Australian population for severe combined immunodeficiency.

EARLY DIAGNOSIS OF OTHER PIDs

Goal: Enable early diagnosis of other PIDs through recognition of early warning signs of PID, appropriate testing and treatment.

- Due to their rarity, delay in diagnosis of PIDs is common, which is associated with further complications and reduced survival rates.
- Early diagnosis of PIDs is important, since delayed treatment results in the accrual of disability and complications that can be chronic or life threatening.
- As well as recognition of warning signs, improved access to specialist clinical and diagnostic laboratory services is required to improve early diagnosis and treatment.
- Correct diagnosis of PIDs will lead to appropriate treatment, improving quality and length of life. This requires support from expert multi-disciplinary teams comprised of specialist medical, nursing and allied health professionals.
- With targeted resources, patients with PID can be spared unnecessary interventions and instead utilise available medical treatments to maximise opportunities to lead productive and healthy lives.

SUGGESTED SOLUTIONS

Early and accurate diagnosis for PIDs requires:

- Improved access to specialised testing by diagnostic laboratories accredited by National Association of Testing Authority (NATA) or International Accreditation New Zealand (IANZ), with reference ranges for antibody levels and switched memory B cells established for paediatric and adult patients. Research laboratories will still play a role in investigating novel immunodeficiencies. Centres should have both specialised laboratory and clinical expertise.
- Improved access to paediatric and adult clinical immunology/allergy specialists, who are experts in the clinical and diagnostic evaluation of patients with suspected PID.
- Improved education for health professionals about recognising early warning signs of PID and when to refer patients to specialists.

IMPROVED ACCESS TO GENOMIC AND IMMUNE TESTING FOR PID

Goal: Improve access to expert genetic diagnosis by using genomic and immune testing for patients with suspected or recently diagnosed PID, or people with a family history of PID.

- Traditional diagnosis of PID is mainly through laboratory tests for immune function.
- Treatment for PID can be initiated or continued without a genetic diagnosis (using genomic testing) in patients where the clinical history and routine testing demonstrate a clear need for the therapy.
- However, for an increasing number of PIDs, genetic diagnosis is required to make a definitive diagnosis. It also enables targeted therapies and counselling about outcomes based on what is known about that gene, and informed reproductive/family planning decisions.

In many cases, genomic testing for genetic diagnosis of PID, as well as associated complex immune testing, is currently:

- Unfunded and expensive,
- Often sent to overseas laboratories at considerable cost, or
- Performed in research laboratories, that are not accredited by National Association of Testing Authority (NATA) or International Accreditation New Zealand (IANZ).

SUGGESTED SOLUTIONS

Equitable access to funded and accredited genomic and immune testing for diagnosis of PID in Australia requires:

- Funding of diagnostic genomic testing performed by accredited diagnostic laboratories, including the introduction of a Medicare item number in Australia, similar to those introduced in 2020 for identification of childhood dysmorphology syndromes and intellectual disability.
- Adequate staffing and resourcing of laboratories to ensure provision of results in a timely manner.
- Ensuring that genomic testing is supported by genomic medicine and genetic counselling expertise.
- Ensuring that highly complex specialised immune testing is funded and accessible to all patients with suspected PID in Australia and New Zealand.

IMPROVED ACCESS TO FUNDED AND SUPPORTED PID TREATMENTS

Goal: Improve equitable access to PID treatments, that are appropriately supported and funded.

Research and advances in therapies have resulted in improved health and a longer life for people with PIDs. There are currently six main types of treatment options:

- Antibiotics
- Immunoglobulin Replacement Therapy (IRT) - subcutaneous (SCIg) or intravenous (IVIg)
- Immunomodulation – including biologics
- Hereditary Angioedema (HAE) Treatments
- Haematopoietic Stem Cell Transplant (HSCT)
- Gene Therapy

SUGGESTED SOLUTIONS

Patients with PID require funded equitable access to treatment options listed above, and this requires:

- Treatments to be available to PID patients in rural, remote and regional centres, as well as urban areas.
- Supporting patient education resources, and training for treatment that can be administered at home.

- Prompt communication regarding treatment shortages or product changes.
- Prompt consideration given to access and funding of treatments such as new immunomodulatory agents (including biologics) and long term antibiotic therapy.
- Access and funding for treatment in **all** hospitals (public and private).
- Changes to improve the service model for provision of home based treatments (including SCIg), which can vary widely between centres and regions. These changes should be made in consultation with ASCIA and patient organisations.

SUPPORT FOR PID RESEARCH AND COLLABORATIONS

Goal: Increase support for multi-disciplinary clinical and laboratory PID research and collaborations.

- Primary Immunodeficiencies (PIDs) are relatively rare and complex diseases.
- There is an urgent need to measure the prevalence, diagnosis and outcomes of patients with PID using genomic testing alongside conventional diagnostics to enable the delivery of appropriate care and to estimate resource utilisation.
- The application of genomic technologies is changing this field and the benefits of these diagnostic advances will only be achieved in clinical and research centres with expertise in PID and translational genomics. It is important to continue to evaluate the impact of diagnosis through genomic testing, to ensure appropriate use of this testing.
- It is also important that we understand more about the natural history and prognosis of PIDs. This requires support for registries to track the clinical course of PID, and collaborations between clinical immunology specialists and nurses with other health professionals and research collaborations.

SUGGESTED SOLUTIONS

Increased financial support is required for clinical research into PID and collaborations between clinical immunology specialists and nurses with other health professionals. More funding is needed to:

- Monitor numbers of affected individuals and trends in PIDs, through a comprehensive Immunodeficiency Register.
- Know the impacts of PIDs on patients, carers, health services and community.
- Understand more about the natural history and prognosis of PIDs.
- Improve collaboration between clinicians and researchers, to discuss cases and disseminate discovery research and knowledge rapidly across networks.
- Enable genomic patient testing, using accredited laboratories and a standardised consent process.
- Support rapid functional validation of results from accredited genomic testing, which are likely to be important.
- Establish PID centres of excellence, including virtual centres that provide expert advice.
- Facilitate the rapid translation of research-based tests to accredited tests performed by diagnostic laboratories, along with establishment and maintenance of a comprehensive test directory.

For more details regarding the issues listed above, please refer to the ASCIA Immunodeficiency Strategy for Australia and New Zealand. www.nationalimmunodeficiencystrategy.org.au/
The ASCIA Immunodeficiency Strategy is based on expert opinion, consensus and publications. Reference lists that include the publications are available at www.allergy.org.au/hp/papers#p4

PID ISSUES AND THE INQUIRY TERMS OF REFERENCE

This submission focuses on five issues that are relevant to the following parliamentary inquiry terms of reference, as outlined in the table below.

This inquiry will consider the following topics so that Australia continues to be well positioned to access new drugs and novel medical technologies in a timely manner and respond to emerging global trends:

- The range of new drugs and emerging novel medical technologies in development in Australia and globally, including areas of innovation where there is an interface between drugs and novel therapies;
- Incentives to research, develop and commercialise new drugs and novel medical technologies for conditions where there is an unmet need, in particular orphan, personalised drugs and off-patent that could be repurposed and used to treat new conditions;
- Measures that could make Australia a more attractive location for clinical trials for new drugs and novel medical technologies; and
- Without compromising the assessment of safety, quality, efficacy or cost-effectiveness, whether the approval process for new drugs and novel medical technologies, could be made more efficient, including through greater use of international approval processes, greater alignment of registration and reimbursement processes or post market assessment.

Reference:
www.aph.gov.au/Parliamentary_Business/Committees/House/Health_Aged_Care_and_Sport/Newdrugs/Terms_of_Reference

Parliamentary Inquiry Terms of Reference:	Improve access to new drugs and emerging novel medical technologies	Incentives to research, develop and commercialise new drugs and novel medical technologies	Measures to attract clinical trials for new drugs and novel medical technologies	Improve efficiency of approval process for new drugs and novel medical technologies
ASCIA Issues: Newborn screening for early diagnosis of severe PID				
Early diagnosis of other PID				
Improved access to genomic and immune testing for PID				
Access to funded and supported PID treatments				
Support for PID research and collaborations				