The Aplastic Anaemia and other Bone Marrow Failure Syndromes Registry

2015 Ongoing

The Australian Aplastic Anaemia and other Bone Marrow Failure Syndromes Registry (AAR) was established to capture the epidemiology, current treatment and clinical outcomes of these important but rare Bone Marrow Failure Syndromes (BMFS).

Most patients with Aplastic Anaemia (AA) develop anaemia, bleeding (due to low platelet counts) and infections, which can be life-threatening. Usual treatment includes immunosuppressive therapy (IST), with haematopoietic stem cell transplantation (HSCT) an option for some (usually younger) patients. Many patients depend on ongoing transfusion support, with red blood cells and platelets, as well as measures to prevent and manage infection.

AA is a diagnosis of exclusion and can be confused with other acquired and inherited BMFS (IBMFS) which can mimic the presentation of AA. Both AA and IBMFS are rare conditions but are increasingly recognised as distinct entities, especially now with greater access to molecular diagnostics.

Why do we need a registry for these conditions?

The absence of coordinated data collection has created barriers to comprehensive research, at national and international levels. Conducting clinical trials is difficult due to the rarity of the conditions, so registries play important roles in understanding the clinical journey and long-term outcomes of patients with BMFS. Currently, few Australian data are available on the incidence, treatment or clinical outcomes of acquired AA and IBMFS.

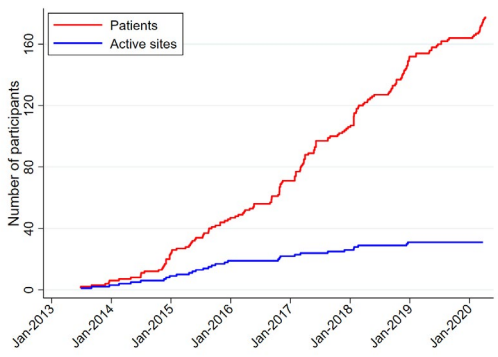
What is the AAR doing?

The AAR was first established as the Aplastic Anaemia Registry in 2013 to address these evidence gaps. The registry collects data on adult and paediatric patients with AA. Excitingly, from 2020, the registry has been expanded and now collects data on other BMFS, including IBMFS. The project is overseen by a national Steering Committee of clinical and registry experts, chaired by Professor Frank Firkin of St Vincent's Hospital Melbourne, and managed by the Transfusion Research Unit in the School of Public Health and Preventive Medicine at Monash University, which is noted for its registry expertise.

Registry Steering Committee Members L to R Professor Frank Firkin (chair), Professor Jeff Szer, Associate Professor Merrole Cole-Sinclair, Professor Erica Wood and Dr Lucy Fox

The AAR now has 39 paediatric and adult sites participating across Australia, and to date approximately 180 patients, with a range of diagnoses, have joined the registry. As patients are enrolled and follow-up data accrue, the registry will be able to provide a better picture of the natural history of both AA and inherited BMFS. Information is collected following diagnosis, at six months and then annually. Data are collected onto a secure, web-based data collection form designed specifically for this research. It records data for each patient in the following categories:

- Demographic details (including ethnicity)
- Clinical context including possible precipitants
- Family history (including IBMFS)
- Clinical presentation
- Laboratory test results at initial presentation and during follow-up
- Therapy (details of IST, HSCT, and supportive therapy)
- Clinical outcomes including details of any relapse, complications (of therapy or condition), performance status indicators and disease progression.



Recruitment of participating hospitals and patients to the AAR. The graph demonstrates that once a critical number of key sites are recruited, patient recruitment can follow – these are both vital for research in rare conditions.

Data on each patient are entered at multiple time-points over a period of years, to allow monitoring of changes in treatment and outcomes over time and will provide vital long-term outcome data for these important conditions.

Registries can serve as platforms to support a wide range of research

Better treatments for BMFS are urgently needed. Registries offer clinical networks and infrastructure to efficiently conduct observational and interventional clinical research, and importantly to monitor changes in clinical practice, including the uptake of new therapies and use of clinical guidelines.[1] Monash University's registries are currently being used for a number of clinical trials and other research projects in a range of blood disorders.[2]

Leveraging the AAR's national clinical network and infrastructure, the DIAAMOND-Ava clinical trial, Diagnosis of Aplastic Anaemia, Management and Outcomes utilising a National Dataset, was recently opened, an interventional clinical trial of a second-generation thrombopoietin-receptor agonist, avatrombopag in both upfront (treatment-naïve) and relapsed/refractory AA. Importantly, this is the first trial of a new therapy in this condition to be conducted in Australia for some decades. The trial is funded by Federal Government's Medical Research Future Fund. Eight hospitals have so far opened to recruitment, with more in the process of joining, and 13 patients have already been enrolled to the trials.

Registry data and activities have been highlighted during 2019 in a poster presentation at the annual "BLOOD" conference in 2019, and a review article for the Internal Medicine Journal – the journal of the Royal Australasian College of Physicians, to reach a national clinical audience.[3,4]

How you can help

If you are a patient, please consider joining the AAR. Your information is vital to help paint a picture of BMFS across Australia. Your data will be held securely and confidentially by Monash University.

If you are a treating clinician, please discuss the AAR with your patients and families and encourage them to participate.

If you have an idea for a research project using the AAR, or if you are an individual or organisation who can support the AAR with funding or other resources, please get in touch:

AAR: AAR@monash.edu
DIAAMOND trial: sphpm.diaamond@monash.edu

References

1. Commonwealth of Australia, 2013: Strategic Review of Health and Medical Research in Australia (McKeon Report).
2. Transfusion Research Unit, Monash University: www.monash.edu/medicine/sphpm/units/transfusionresearch
3. Fox LC, Firkin F, Badoux X, Bajel A, Cole-Sinclair M, Forsyth C, Gibson J, Hiwase D, Hong F, Johnston A, McQuilten Z, Mills A, Opat S, Roncolato F, Ting S, Szer J, Barbaro P, Fox V, Wellard C, Waters N, Wood E: Update from the Australian Aplastic Anaemia Registry: diagnostic challenges in a diagnosis of exclusion. Blood 2019 (poster).
4. Clucas DB, Fox LC, Wood EM, Hong FS, Gibson J, Bajel A, Szer J, Blombery P, McQuilten ZK, Hiwase D, Firkin F, Cole-Sinclair MF; Australian Aplastic Anaemia Registry Steering Committee. Revisiting acquired aplastic anaemia: current concepts in diagnosis and management. Intern Med J. 2019;49(2):152-159.