Information Sheet for General Practitioners

**P**enicillin **A**llergy **D**e-**L**abelling in **P**aediatric **O**ut**P**atients **(PADLPOP)**

Dear Doctor,

I am writing to you to inform you of the Penicillin Allergy De-Labelling in Paediatric OutPatients (PADLPOP) study which we will be running through the Leading Steps Paediatric Clinic and Pindara Emergency Department.

**Study Summary and Background Information**

Peer reviewed research has identified that unverified penicillin allergy labels are common place, lead to poorer patient outcomes, contribute to the challenge of managing antimicrobial resistance and have significant health economic implications. As such medical bodies across the world have been advocating for penicillin allergy testing to be performed routinely in patients self-reporting penicillin allergy. However, penicillin allergies have historically been assessed with triple testing (bloods, skin prick testing and oral provocation challenge). As such de-labelling has predominantly occurred as part of tertiary allergy services. The scale of the issue and competing needs within overstretched public allergy services have prevented the vast majority of patients accessing de-labelling services. Recent studies have demonstrated that patients with ‘no’ and ‘low risk’ allergy histories can be safely de-labelled using clinical history and oral provocation challenges alone. In 2020 The Australian Society for clinical Immunology and Allergy (ASCIA) released a consensus statement for the assessment of patients with suspected penicillin allergy. This provided recommendations for the risk stratification of patients labelled as penicillin allergic and guidelines for the community assessment of patients identified as ‘no’ or ‘low risk’ of a true penicillin allergy. The statement also documents that ‘Penicillin allergy testing should always be performed in a setting where skills and equipment to treat anaphylaxis are available’.

The PADLPOP study will assess the implementation of the ASCIA guidelines into the private secondary care setting i.e., clinical assessment with a general paediatrician and oral provocation testing in the emergency department at Pindara Private Hospital. The study aims to verify that general paediatricians/emergency physicians can safely assess, risk stratify and undertake oral provocation challenges in children presenting with ‘no risk’ or ‘low risk’ histories for penicillin allergy. The study also aims to demonstrate that Penicillin allergy testing is cost-effective with a health economic evaluation of the data.

**What is required of general practitioners?**

To provide a referral to Dr Amy Whittaker, General Paediatrician at Leading Steps Paediatric Clinic. This referral can be given to the patient or sent through Medical Objects.

**What is required of patients?**

They obtain a referral (either from their GP or treating doctor) and attend a telehealth or in-person clinic appointment for clinical assessment and risk stratification. If patients are identified as ‘no risk’ of penicillin allergy (e.g. avoiding because of a family history or gastrointestinal side effects) they will be provided with education and have their penicillin allergy label removed. If they are identified as ‘low risk’ (e.g. a benign rash with no high risk symptoms) they will be invited to attend the Emergency Department at Pindara Private Hospital for an oral challenge. If the patient does not react in the ED they will be asked to complete a 5 day course of antibiotics at home. This allows us to identify patients who develop delayed hypersensitivity rashes (approx. 4%). Patients will be provided with education and documentation verifying their true allergy status. Patients confirmed allergic will also be given the ASCIA action plan and details of how to purchase a Medicalert bracelet. Verbal and written information will be provided on how to update their My Health Record.

**Are there any out of pocket expenses for the patient?**

No. Everything will be bulk billed and travel expense will be re-imbursed.

**Do they need to have private health insurance?**

No

**Who are you recruiting?**

1. Children aged 1-16 years
2. Penicillin allergy label
3. No or Low risk of a true allergy i.e. Avoiding penicillin because of a family history, gastrointestinal symptoms, benign rash more than 1 year ago.

**Who are you excluding from the study?**

1. Patients with a history consistent with a ‘high risk’ of a penicillin allergy (immediate urticaria, rash within the last year, or angioedema and/or systemic symptoms or unknown history)
2. Patients who are pregnant
3. Patients with unstable cardiorespiratory disease or any other medical condition which in the opinion of the investigators would place them at increased risk should they have an allergic reaction.
4. Significant immunosuppression due to medical treatment including daily oral steroids exceeding a dose of 0.5mg/kg

**What does an oral provocation challenge involve?**

Patients will receive 10% of the full dose of the culprit penicillin followed by the remaining 90%. If they do not have an allergic reaction, they will complete a 5 day course of antibiotics at home. They will then be followed up to determine if they tolerated the course and verify their allergy status

**Does it matter if the culprit penicillin is unknown?**

NO. If the culprit penicillin is not known they will be given amoxicillin.

**How long are patients followed-up for?**

Patients will be followed-up for 12 months via phone calls at 4, 8 and 12 months. This is to explore whether the intervention has resulted in any changes to antibiotic prescribing or healthcare utilisation. This data will be used to complete a health economic evaluation of the service.

**Where can I or my patient find out more information about the PADLPOP study?**

If you or you patients wish to find out more about the study, please see <https://leadingsteps.com.au/penicillin-allergy-study> or contact the clinical trials unit on 07 5588 9008.

**Patients can register their interest in the study via an on-line form on the Leading Steps website. They will then be contacted by a research nurse who will be able to have a more detailed discussion and establish their eligibility for the study.**

**Detailed background information**

Penicillins are one of the most widely prescribed drugs in paediatric practice. Approximately 10% of the population report having a penicillin allergy. However, most allergy labels remain unverified and are unjustified. In fact, over 90% of patients reporting a penicillin allergy are able to tolerate penicillin when formalised testing is undertaken. Antibiotic allergy is over-reported for a number of reasons, most commonly the patient develops a rash associated with a viral illness for which the antibiotic was prescribed; the rash is then erroneously attributed to the antibiotic. Similarly, side effects of medications such as gastrointestinal upset are also reported as drug allergy. Furthermore, true IgE mediated allergy wanes over time and up to 80% of patients develop tolerance over a 10 year period.

Antibiotic allergy labels are associated with adverse clinical outcomes. Decreased efficacy of alternative agents have been shown to result in increased treatment failures, increased length of hospital stay and increased intensive care admissions. With the increased use of broad spectrum antibiotics comes an increase in antimicrobial resistance (e.g. VRE, MRSA) and an increase in antibiotic related adverse events e.g. clostridium difficile and toxicity. As a result in-patient costs for penicillin allergic patients are reported to be higher but further research to evaluate long term health economic outcomes is required. Despite a clear understanding of the impacts of inappropriate penicillin allergy labels and clear advice advocating for routine testing it is not occurring in routine practice.

The investigative team anticipates that by demonstrating that the assessment and management of patients with ‘no’ and ‘low risk’ penicillin allergy histories can occur safely in secondary care and in the private sector, more patients will undergo testing with improved outcomes for the patient and the broader community. This view is supported by the position statement from the American Academy of Allergy Asthma and Immunology which states ‘on the basis of current evidence we are confident that more frequent and routine performance of penicillin allergy testing will be associated with reduced costs of care, enhanced patient safety, and improved outcomes of care’.

Thank you for taking the time to read this information leaflet.

With Kind regards

Dr Amy Whittaker