esa

ENDOCRINE SOCIETY OF AUSTRALIA

ANNUAL REPORT

2023

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ABOUT THE ENDOCRINE SOCIETY OF AUSTRALIA

ESA STRATEGIC PLAN

ESA STRATEGIC DIRECTIONS

KEY AREAS OF PRIORITY

About the Endocrine Society of Australia

The Endocrine Society of Australia (ESA) is a national non-profit organisation of scientists and clinicians who conduct research and practice in the field of Endocrinology.

The Society was founded in 1958 and incorporated in 1986 in the State of Victoria.

The Society is governed by the ten members of its Council who are elected every two years by a ballot of the membership in accordance with the Constitution.

Our membership continues to grow every year: we currently have 1100 members.

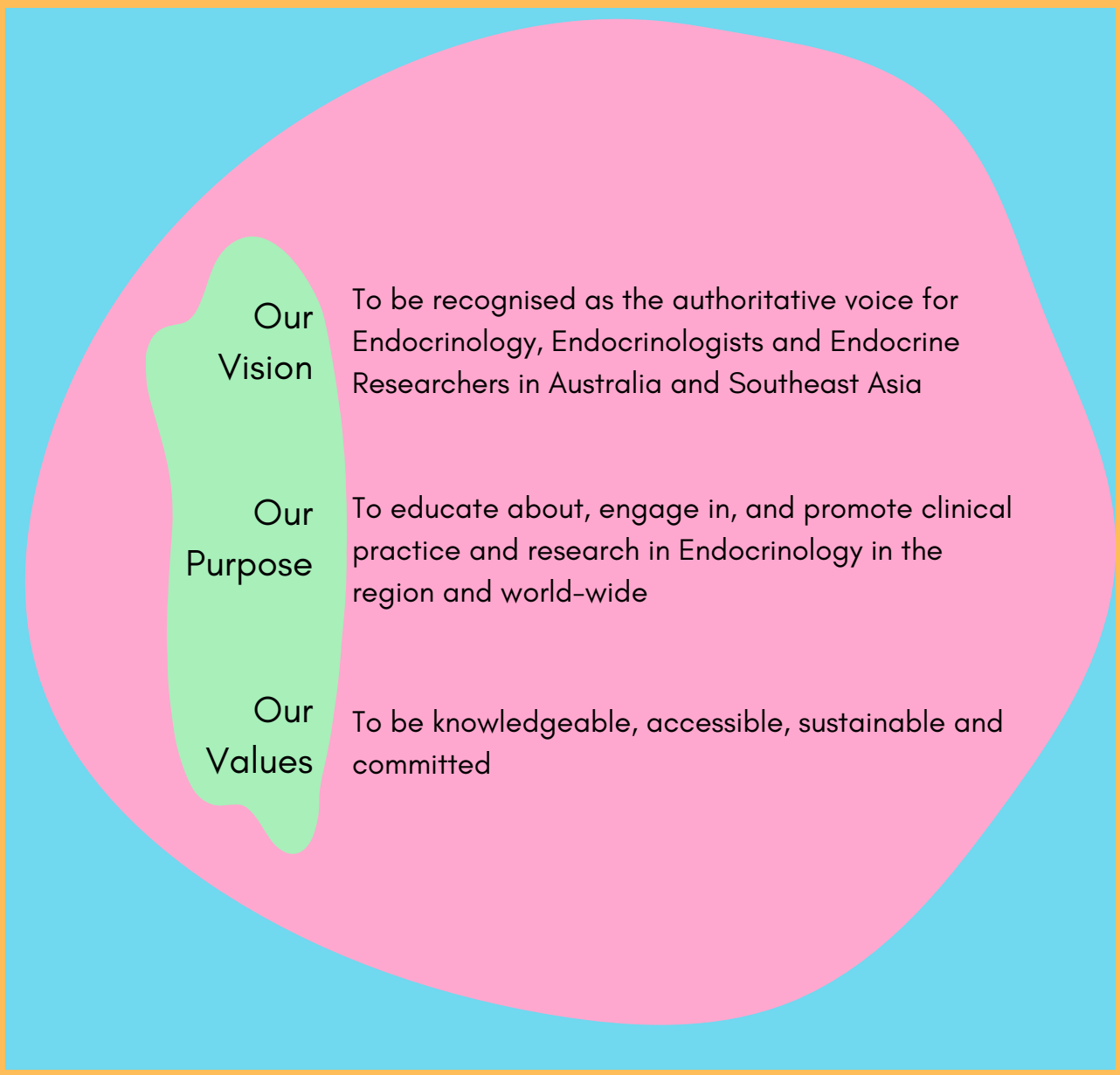
This society is strengthened by its composition of both clinicians and basic science members; and we believe that this true integration of disciplines is one reason for its continued success.

The mission of the ESA is to be the premier society in Australia in the field of endocrinology through promoting excellence in research, fostering the integration of clinical and basic sciences, and facilitating the translation of our science to health care and clinical practice.

Key objectives to achieve these goals include the nurturing and developing the future generations of basic and clinical scientists and other health professionals and the dissemination of new knowledge in endocrinology through our Annual Scientific Meeting and Seminars.

The ESA will be proactive in shaping the research and health policies based on scientific advances in our field.

ESA Strategic Plan



ESA Strategic Directions

Financial

To maintain financial sustainability for the future

Education

To promote the education of our current and future endocrinologists and endocrine researchers

Listening

To listen to our membership

Engagement

To engage with our members, government bodies, funding bodies and the public to address and resolve issues that affect endocrinology and endocrine research

Promotion

To promote the profile of the Endocrine Society of Australia

Continuity

To ensure the governance of the society has continuity of knowledge and expertise

Key Areas of Priority

1 Financial Sustainability

1.1 Achieve a sufficient and more reliable income stream through investments, industry, bequests and conferences

1.2 Maintain a productive operating budget

1.3 Maintain long term financial sustainability of the scholarship programs

2 Education

2.1 Provide high quality conferences and meetings that attract international and national interest

2.2 Provide support for junior members, both clinical and basic scientists with membership, training, education and scholarships

2.3 Support continued training of high quality endocrinologists through work force planning and addressing issues affecting training

3 Internal Engagement

3.1 Hear the needs of our members

3.2 Retain and ensure sustainability of our expertise within the membership

3.3 Communicate and engage other endocrine based societies to increase membership both nationally and internationally

3.4 Ensure ESA members are assisting ESA to reach its objectives

Key Areas of Priority

4 External Engagement

4.1 Engage consistently with the RACP for endocrinology training, secretariat business and endocrine advocacy

4.2 Engage with industry for sponsorship and financial sustainability

4.3 Engage with Government for addressing endocrine issues that affect ESA sustainability and profile

4.4 Engage with the NHMRC at every possible level to promote the funding of endocrine research, for endocrine advocacy and for the joint production of position statements

4.5 Engage with the public via the media to enhance the ESA profile and opportunities for bequests

4.6 Increase our presence and effectiveness on other boards and panels of institutions

5 Governance

5.1 Maintain a highly skilled and motivated board

5.2 Source skilled, motivated and committed consultants with clearly defined roles to drive our objectives

5.3 Have the right committees with the right people to deliver strategic objectives

5.4 Educate board members in governance so our strategic ability and decision making is enhanced

6 Profile

6.1 Promote Endocrinology within Australia via our branding

6.2 Provide education, networking opportunities and showcase our research

6.3 Promote our expert members both nationally and internationally

6.4 Be recognised as the authoritative voice for endocrinology, rare endocrine disorders and obesity in Australia and the region

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COUNCIL AND OFFICE BEARERS 2023

2023
Council and Office Bearers

President

Associate Professor
Ann McCormack

Staff Specialist
Department of Endocrinology
St Vincent's Hospital Sydney

Head
Hormones and Cancer Group
Garvan Institute of Medical Research

Head of Endocrinology & Diabetes,
Western Health

Endocrinologist at The Alfred

PhD student in School of Public Health and
Preventive Medicine at Monash University

President-Elect

Associate Professor
Shane Hamblin

Treasurer

Professor
Jenny Gunton

Director of the Centre for Diabetes and
Obesity Research at the Westmead
Institute for Medical Research

Chair of Medicine at Westmead
Hospital, University of Sydney.

University of
Melbourne
Austin Health

Honorary Secretary

Professor
Mathis Grossmann

2023
Council and Office Bearers

Councillor
Associate Professor
Frances Milat

Endocrinologist; Deputy Director of Endocrinology, Monash Health
Head, Metabolic Bone Services, Monash Health
Head, Metabolic Bone Research Group, Hudson Institute of Medical Research
Adjunct Associate Professor, School of Clinical Sciences, Monash University

Endocrinologist
NHMRC Research Fellow
Department of Medicine Austin Health
The University of Melbourne

Councillor
Dr Ada Cheung

Councillor
Dr Liz Johnstone

Harry Perkins Institute of Medical Research

Endocrinology & Genetics
Royal Adelaide Hospital

Adelaide Medical School
University of Adelaide

Councillor
Associate Professor
Sunita De Sousa

2023
Council and Office Bearers

Councillor
Dr Sheila Cook

Senior Staff Endocrinologist and Obstetric Physician
St Vincent's Private Hospital, Toowoomba and Toowoomba Hospital

Academic Lead, University of Queensland Rural Clinical School, Toowoomba

Head, Department of Endocrinology
Royal North Shore Hospital

Professor in Medicine
University of Sydney

Councillor
Professor
Roderick Clifton-Bligh

Executive Officer
Ms Ivone Johnson

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145 Macquarie Street
Sydney. NSW. 2000

Administrative Assistant
Ms Melissa Douglas

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PRESIDENT'S REPORT

TREASURER'S REPORT

President's Report

I am pleased to report that 2023 has been a very successful year for ESA, and we have been able to emerge relatively unscathed from the challenges of the last couple of years during the COVID-19 pandemic. In fact I think ESA has continued to thrive and make significant progress towards its mission of advancing endocrine science and clinical practice.

Since its inception, the Endocrine Society of Australia has a proud heritage in supporting and promoting leading research and providing high level educational meetings to its members.

On the final weekend in April 2023 we held our annual seminar meeting in Sydney with a total of 621 registrants made up of 374 face to face participants and 247 online. This meeting was an outstanding success and I want to wholeheartedly thank our Convenors Stella Sarlos and Carolyn Allan for all their work in formulating an exceptional program featuring Ania Jastreboff from Yale University, USA, an internationally recognised clinical researcher in obesity and diabetes.

For the first time at this year's ASM, the ESA and ENSA (Endocrine Nurses' Society of Australasia) came together in a joint symposium and we look forward to a closer partnership in the future.

The 2024 ESA Seminar meeting is also shaping up to be a fantastic meeting to be held in Darwin for the first time from April 26-28th. There will be a pituitary focus to this meeting and Stella and Carolyn have been able to secure Professor Maria Fleseriu from Oregon University in the USA as plenary speaker.

The annual clinical weekend is another highlight of the ESA calender, where fascinating and challenging clinical cases are presented by our Advanced Trainees following a highly competitive selection process. It was held at the Voco Hotel in Brisbane, with a total of 363 registrants, 294 face to face and 69 livestream, and this year's themes being Adrenal, Reproductive and General Endocrinology. Plenary speakers Professor William Rainey from Michigan Medical School and Professor Janet Hall from the NIH, USA both delivered outstanding plenary talks and participated in case discussion.

My immense gratitude to co-convenors Emily Brooks and Anjana Radhakutty for putting together an excellent program.

President's Report

This year's ASM once again led by co-chairs Jun Yang and Mitchell Lawrence has been fantastic with 704 registrants. I thank them both for all the work they have done for ESA in putting this meeting together. Mitchell Lawrence will step down after this year to be replaced by basic science co-chair Mitchell Sullivan.

Mitch Lawrence has been a truly outstanding POC co-chair and I want to thank him immensely for all his dedication and work in this role. We have again heard outstanding plenary talks on primary aldosteronism and hypothalamic amenorrhoea from our plenary speakers Professor Bill Rainey and Professor Janet Hall. Symposium themes have included autoimmune endocrinopathies, neuroendocrine imaging, hormone-related cancers and women's health.

For the first time at this year's ASM, the ESA and ENSA (Endocrine Nurses' Society of Australasia) came together in a joint symposium and we look forward to a closer partnership in the future. The meeting also featured 2 new ESA awards - the Clinical Endocrinology Journal Early Career Research Award and the ESA-SfE Exchange Award. The ESA are always looking for new ways of supporting the career progression of our members.

There have been other new educational initiatives this year including regular webinars and podcasts. Flavia Bueno put together a female endocrinology webinar series with over 100 participants at each meeting.

Lachlan Angus and Shejil Kumar have begun developing podcasts designed to help our younger members navigate the early stages of their careers.

We have also been reaching out to our consumer audience with the continued enhancement of Hormones Australia with production of a monthly article suitable for public interest. Thank you particularly to Ada Cheung for all her work with the websites.

Click to view details of these initiatives:

ESA Webinars

Hormone Hotseat Podcast

Hormones Australia

ESA remains very committed to enabling endocrine research. We continue to look for ways to increase our spending on research scholarships and the ESA seed grants remain very popular.

President's Report

We are very fortunate to have received a generous bequest from the late Robert Archibald Burns to be used specifically for pituitary research.

We are very fortunate to have received a generous bequest from Robert Archibald Burns who passed away in 2019, a previous patient of the Alfred Hospital in Melbourne.

He left in his will a total of $3,062,914.72 to be used specifically for pituitary research. The Burns Trust is administered by the State Trustees of Victoria and ESA is to receive an annual income from the trust fund. Jenny Gunton will speak more to how this will be managed by ESA Council.

Another priority of ESA is strengthening our collaborations with other international endocrine societies. The ESA-SfE Exchange Award are an example of this.

Another relatively new partnership, led by the Endocrine Society, is the Global Endocrine Leadership Coalition, whose goal is to facilitate global endocrine society collaboration on a range of projects such as addressing endocrine workforce pipeline challenges and reducing the effect of climate change on endocrine disorders. In addition, our relationship with the Korean Endocrine Society continues to build momentum. This year the joint ESA-KES symposium was held at the 11th Seoul International Congress of Endocrinology and Metabolism meeting held in Seoul, South Korea in late October. The title of the symposium was “Pituitary and Adrenal Frontiers”. ESA speakers were Dr Nele Lenders and A/Prof Jun Yang.

The societies have also agreed to increase financial support through travel awards to enable younger members of both societies to attend and present at each society’s meeting.

The ESA is also working to strengthen its working relationship with the Royal Australasian College of Physicians. They assisted in formulating a communication piece to our members on the change in CPD requirements imposed by the medical board.

We are also interested in working with RACP on a project to examine the endocrine workforce needs in the future and to address significant challenges facing our field in terms of support for clinical researchers.

President's Report

We are also interested in working with RACP on a project to examine the endocrine workforce needs in the future and to address significant challenges facing our field in terms of support for clinical researchers. The RACP have instigated advanced training curriculum reviews and it is important ESA continues to have a leading role in the education of our future endocrinologists.

To this end we will be aiming to revise a Model of Collaboration with the RACP to establish ESA as the principal education provider to endocrine trainees.

A particularly exciting initiative of the ESA over the past year has been the growth in Special Interest Groups. The aims of these groups is to connect members with particular interests and foster exchange of ideas and further collaborations.

The Australian and New Zealand Pituitary Alliance (ANZPA) held its inaugural meeting on the Gold Coast in July, bringing together a multidisciplinary group of clinicians including endocrinologists, surgeons, radiation oncologists, pathologists and paediatricians to discuss advances in pituitary medicine and the latest in Australian research. It was successful first meeting raising a healthy surplus for ESA.

It is exciting to see such enthusiasm and initiatives from ESA members in the evolution of our discipline.

The Women in Endocrinology Group is led by Lisa Raven, the EndoGen group by Sunita de Sousa and the newest group ESA Sustainabilty are meeting for the first time at this meeting. It is exciting to see such enthusiasm and initiatives from ESA members in the evolution of our discipline.

ESA is also fortunate to have a very strong and devoted Early Career Committee who continue to shape the future of our society. The current team comprises 9 members led by Lachlan Angus and Amy Dwyer. I wish to thank Lachlan and Amy for their leadership and initiatives.

We thank outgoing ECC members including Emily Brooks, Matti Gild, Annabelle Warren, Alexander Rodrigues and Shejil Kumar for their outstanding contributions.

President's Report

We are rapidly coming to the end of 2023 and I wish to thank my fellow councillors for all their time and dedication to ESA. I would like to particularly mention Bu Yeap who will be stepping off council after a total of 17 years of voluntary service to ESA including 2 as President. From all of us Bu, thank-you for all that you have done for our society.

We have also welcomed new councillors, Sunita De Sousa, Liz Johnstone, Rory Clifton-Bligh and Jenny Gunton. Unfortunately Sheila Cook has let us know she is unable to continue on council at this time and council will look to this now open position.

I would also like to thank Shane Hamblin for leading the Medical Affairs Committee and for all those councillors contributing as well as Leon Bach and John Walsh.

Jenny Gunton has done a fabulous role as Treasurer, thank you for all your guidance and support and thanks also to Mathis Grossman as Secretary who has worked on refining award criteria, developing guidelines for guideline writing groups and keeping us abreast of medicine shortages.

Finally, Ivone Johnson for all she does behind the scenes in guiding the ESA over a number of years now with such wisdom and calm.

I would like to particularly mention Bu Yeap who will be stepping off council after a total of 17 years of voluntary service to ESA including 2 as President.

From all of us Bu, thank-you for all that you have done for our society.

In conclusion, I am proud of the ESA's standing in the international community and we continue to work very hard in enriching opportunities for our members both at home and abroad.

In my role as President it is a privilege to be able to guide the ESA through future challenges and foster new ideas to facilitate the continued growth of our society.

Ann McCormack
ESA President

Treasurer's Report

Total position (excluding Annual meeting equities, see last page for more information)
= $ 2,334,428.70
• 2022 $2,415,290
• 2021 $2,769,457

KEY POINTS

ESA received a bequest of $3,062,914.72 from Robert Archibald Burns which will be administered by State Trustees Victoria. Each August ESA will receive an annual distribution from the bequest of approx. $60-$120K of trust net income. As set out in the bequest, this is to be spent on "biomedical research in the field of pituitary hormone research".

1. Shares - fluctuating but a general rise over the last 6m.
2. Transferred $50,000 into a term deposit: ANZ, 12 months, 5.12%.
3. Also transferred $44,054.70 to a second term deposit - this is the 10K seed fund + profit from the first ANZPA meeting. 12 month term, 5.47%.
4. Another interest rate rise in November. Wording suggests that there may be further rises.
5. China continues to show signs of potential economic problems.
6. Geo-political issues continue in Ukraine.
7. War in Gaza / Israel.

POSITIONING

1. Maintaining an asset allocation to protect against inflationary pressures.
2. Overweight in alternatives, infrastructure and direct property to protect downside. Avoiding commercial real-estate.
3. Underweight equity position against Australian dollar.
4. One ESA and one ANZPA term deposit. The ESA one we may roll over, presuming the funds are not required at completion. The ANZPA one will probably be rolled out at maturity to start setting up the 2025 ANZPA meeting.

Treasurer's Report

Accounts

Endocrine Society

Balance at 8/11/2023:
$1,511,115

Note $50,000 added in as a term deposit,
so actual performance =
loss $48,291 vs September.
But, a good annual rise vs Oct 2022

Previous totals

07/09/2023	$1,509,396
07/07/2023	$1,431,537
27/04/2023	$1,415,763
21/02/2023	$1,406,679
18/10/2022	$1,336,404
26/07/2022	$1,349,211
29/06/2021	$1,406,067
19/05/2020	$1,176,723

Wynne Scholarship

Balance at 08/11/2023:
$724,383

Loss of $21,599 since September.
Funds usually withdrawn each October
A good annual rise vs Oct 2022

Previous totals

07/09/2023	$745,982
07/07/2023	$731,912
27/04/2023	$724,030
21/02/2023	$719,299
18/10/2022	$748,232
27/07/2022	$786,394
29/06/2021	$829,053
19/05/2020	$716,749

NAB Business management

Total $54,880
Previously $158,194.11

New $44,054.70 ANZPA term deposit came out of this account and isn't yet showing.
And payment of awards
$27,225, $11,000, 3 by $3,500 = $48,725
Tax office payments $6,939
(these together =$99,718)
Rest salaries, rent etc. make up the rest.

ASN

Equity total = $880,245.37

Treasurer's Report

Obviously, a lot of expenditure coming up for Clinical weekend and ASM so most of this is not ready money. However, consider seminar weekend?

Seminar Weekend

Current equity (30 Sep 2023): $106,579.20
Includes $86,616 in a NAB operating account.

Should ESA collect some of that to put in term deposit / investment accounts?
If yes, how much / how long will not risk any cash-flow problems for the 2024 meeting?

Profit 2023: $33,922.34
Yearly audit (received Aug 2nd) good.

Clinical Weekend

Current equity (30 Sep 2023): $171,719.58

Lots of expenditure to come for the meeting, of course.

Profit 2022: $817
Yearly audit (received Aug 2nd) good.

ASM

Current equity (30 Sep 2023): $601,939.59

Lots of expenditure to come for the meeting, of course.

Updated 2022 ASM profit: $6,056.24 (NZD6185.35) DEBIT
Yearly audit (received Aug 2nd) good.

ASM sponsorship target $204,000.
As of Nov 8th $252,450 - great achievement!!!

Jenny Gunton
Treasurer

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MEDICAL AFFAIRS COMMITTEE REPORT

EARLY CAREER COMMITTEE REPORT

SCIENTIFIC STRENGTHENING COMMITTEE REPORT

COMMUNICATIONS COMMITTEE REPORT

ESA/SRB/ENSA ASM PROGRAMME ORGANISING COMMITTEE REPORT

SEMINAR REPORTS

Medical Affairs Committee

The members of the MAC are Leon Bach, Ada Cheung, Rory Clifton-Bligh, Sheila Cook, Sunita De Sousa, Mathis Grossmann, Shane Hamblin, Ann McCormack, Fran Milat, Bu Yeap, and John Walsh.

MAC receives requests for advice from Federal and State Governments, RACP, other specialist societies, ESA members, the media, lobby groups, individual doctors and patients.

Over the past year MAC has been invited to comment on the following areas:

- Proposal for recognition of genetic pathology as a separate specialty
- Consultation on Diabetes and Obesity Parliamentary Standing Committee on Health and Aged Care
- Newborn bloodspot screening programs, Department of Health and Aged Care
- Endocrinology workforce distribution (for Rural Doctors Association)
- Proposal to expand the CGM subsidy to people with pancreatogenic/type 3c diabetes
- NDSS Enhancement Project
- Transgender endocrine care (enquiries from the media and Senator Simon Birmingham, Leader of the Opposition in the Senate)
- International evidence-based guidelines for the assessment and management of polycystic ovary syndrome (with thanks to Bronwyn Stuckey, Christina Jang and Rachel Bradbury)
- Menopause Priority Setting Partnership
- South Australian outpatient triaging guidelines for endocrinology conditions
- Draft National Strategy for the Care and Support Economy

Medical Affairs Committee

- Proposed ESA position statement on hyponatraemia
- Somatotropin, glucagon and GLP-1 RA shortages and the planned discontinuation of quinagolide
- PBS gonadotrophin listing for males
- Proposed PBS subsidised first-line use of Romosozumab in certain high risk groups
- New carbimazole/PTU patient information sheet on Hormones Australia site (with thanks to Rosemary Wong and Don McLeod)
- Healthy Climate Future (ESA became a Specialist Society Supporter)
- Medicare Benefits Schedule item 13760 by endocrinologists (In vitro processing with cryopreservation of bone marrow or peripheral blood!)

While we do not give individual clinical advice to patients as a matter of policy, we have offered generic advice to a number of patients who had concerns about their health.

We have also given advice to colleagues regarding the names of suitable endocrinologists interstate and overseas when patients are planning to relocate.

Shane Hamblin
Chair of the Medical Affairs Committee

Early Career Committee

The Early Career Committee (ECC) was formed in August 2019 and consists of nine early career members. The aims of the ECC are to help advance the clinical and research endeavours of early career members by creating professional development activities, expanding research opportunities and fostering participation of early career members within the ESA.

Key achievements in the last year include:

- Consolidation of the Clinical and Research Fellowship Database formed in 2022, now featuring 27 job descriptions and application pathways! The aim of this database is to create awareness of positions that are historically not advertised through state-based match programs. This can be accessed in the members area of the ESA website. We thank Drs Lauren Tyack and Shejil Kumar for efforts expanding and maintaining the database.

- Creation of our new podcast, Hormone Hotseat, created by Dr Shejil Kumar and featuring four interviews with ESA early career members about topics including transitioning to private practice, starting a research career and PhD, and the interface of nuclear medicine and endocrinology. Episodes can be accessed in the members area of the ESA website.

- Translation of Hormones Australia patient information sheets into languages including Chinese, Russian, Arabic, Greek, Italian, Spanish, Danish, Swedish and Myanmar. We thank volunteers Aminath Laafire, Su Win Htike, Larisa Syphers, Stella Sarlos, Mathua Luo, Zemin Cao, Jing Ni, Kim Ling Goh, Abdulaziz Abbas, Concettina Schimizzi, Juan Rodriguez and Melissa Rodriguez for their time and expertise.

The current committee includes:

Dr Amy Dwyer (SA; Co-chair)

Dr Lachlan Angus (VIC; Co-chair)

Dr Emily Brooks (QLD; Secretary)

Dr Matti Gild (NSW; Events)

Dr James McNeil (SA; Events)

Dr Lauren Tyack (WA; Clinical affairs)

Dr Annabelle Warren (VIC; Advocacy and engagement)

Dr Alexander Rodriguez (ACT; Advocacy and engagement)

Dr Shejil Kumar (NSW; Clinical affairs; RACP advanced trainee representative)

Early Career Committee

- These translations can be accessed on the Hormones Australia website (https://www.hormones-australia.org.au/resources-in-languages-other-than-english/). We thank Dr Alexander Rodriguez for efforts in coordinating volunteers for this project.

- Continuing commitment to promoting early-career member opportunities at ESA Annual Scientific Meeting, ESA Clinical Weekend and ESA Seminar. We have curated an ECR career development workshop at the ESA-SRB ASM discussing the possible paths and challenges faced by early career members, including a panel discussion on navigating work-life balance, job security and funding as an ECR. We thank Drs Emily Brooks, Matti Gild, and James McNeil for their efforts this year.

- Creation of an ESA Awards and Grants calendar outlining important event details. This can be accessed in the members area of the ESA website.

At the coming annual general meeting, five of our members will finish their term. We thank Drs Emily Brooks (QLD), Matti Gild (NSW), Annabelle Warren (VIC), Alexander Rodriguez (ACT) and Shejil Kumar (NSW) for their contributions and enthusiasm.

Following a competitive application process, we welcome newly appointed members Drs Jillian Tay (VIC), Angela Shen (NSW), Mawson Wang (NSW) and Elizabeth Wootton (QLD) for the next 2-year term, aiming to continue a balanced representation of different professional backgrounds, genders, and locations. Once selected, the newly appointed RACP advanced trainee representative will also be invited to join the ECC.

Plans for the coming year include consolidation and expansion of existing projects, increased collaboration with related societies and a webinar series on Chemical Pathology for the Endocrinologist.

Dr Amy Dwyer & Dr Lachlan Angus
Co-Chairs of the Early Career Committee

Scientific Strengthening Committee

In March 2023, the ESA Scientific Strengthening Committee (SSC) was formed by the ESA Council.

The role of the SSC is:

• To promote basic science endocrinology within the science community, both to attract researchers into our field and also into the ESA.

• Advocacy and relationship building within the broader science community.

The inaugural members are:

• Liz Johnstone (Chair)
• Amy Dwyer
• Mitchell Lawrence
• Mitchell Sullivan

In 2023, the SSC has been assisting the ESA Early Career Committee to come up with topics and speakers for their Podcast series.

The SSC has also organised a lunch session, "Lunch & Learn: ESA Basic Science Forum" to be held at the ESA ASM on Monday 27th November, which currently has 85 registered attendees. This session will begin with an introduction to the SSC by Liz Johnstone, followed by a short talk by Karen Moritz on the future and importance of basic science in endocrinology.

The SSC will then run an online poll with the attendees, to get learn about the challenges and opportunities they encounter as basic scientists, as well as what they would like us to do for them as a committee.

We aim to use these insights to inform future activities in 2024.

Liz Johnstone
Chair of the Scientific Strengthening Commttee

Communications Committee

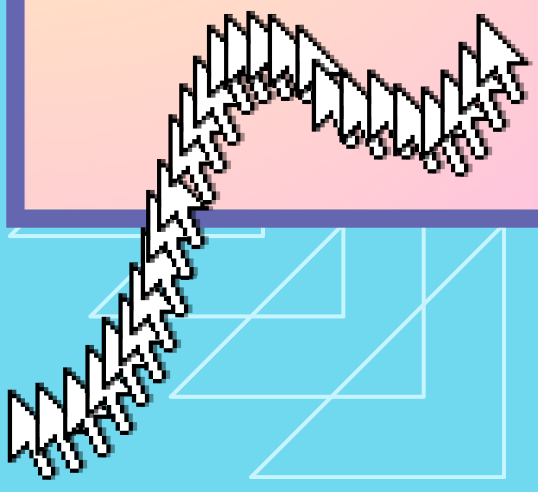
Hormones Australia content is continuing to be updated. Updates to the Endocrine Conditions have all been completed.

A new antithyroid medication patient information fillable PDF is now available for download as a Patient Resource. https://www.hormones-australia.org.au/wp-content/uploads/2023/09/Antithyroid-carbimazole-PTU-information.pdf

Our blog writer for Hormones Australia, Dr Antimony Deor has continued with monthly news articles on the following topics:

https://www.hormones-australia.org.au/2023/10/26/new-diabetes-drug-mounjaro-approved-by-the-tga/

https://www.hormones-australia.org.au/2023/09/20/new-guidelines-for-polycystic-ovary-syndrome-pcos/



Social media updates on ESA activities (meetings, upcoming conferences, latest papers) continues on X/Twitter and is supported by Lisa Raven and Albert Kim.

Ada Cheung
Chair of the Communications Committee

ESA/SRB/ENSA ASM Programme Organising Committee

The ESA/SRB annual scientific meeting was held in person at the Brisbane Convention and Exhibition Centre from 26th - 29th November, 2023.

The 2023 program featured outstanding international and national plenary speakers including Prof Janet Hall from the National Institute of Environmental Health Sciences, NIH, USA (ESA Taft Lecturer), Prof Bill Rainey from the University of Michigan (ESA Harrison Lecturer) and Prof Bu Yeap from the University of Western Australia (ESA-SRB Plenary Speaker).

Our main themes for this year included endocrine dynamic testing, autoimmune endocrinopathies, endocrine cancers, steroid hormone receptors, women's health, reproductive endocrinology, metabolic health and nuclear endocrine imaging. As we foster a closer relationship with the Endocrine Nurses, we held the inaugural ESA/ENSA Joint Symposium on Adrenal Dynamic Testing. Our Hot Topics session focussed on new prolactinoma guidelines, emerging issues in diabetes, sustainability in endocrinology, and artificial intelligence. There were also breakfast sessions on cardiovascular disease and obesity, diabetes and shingles and GIP physiology in diabetes.

Apart from showcasing new research, the ASM also hosted a joint ESA-SRB workshop on Endocrine Education, an ESA Sustainability Interest Group Meeting, and a Science Communications workshop.

In addition to the ESA Gail Risbridger Junior Scientist Award and Bryan Hudson Clinical Award, we also revealed the winners of two new awards: the ESA-SfE Exchange Award and Clinical Endocrinology Journal Early Career Research Award.

ESA/SRB/ENSA ASM Programme Organising Committee

This year we received 182 abstracts across basic science, clinical studies and case reports. There were also 45 ESA invited speaker submissions. There were over 692 registrations for the ASM with over 350 people registered for the conference dinner.

Sponsorship was strong, with a total of $270,525 raised in sponsorship so far for both societies. The sponsorship target was $204,000 so we are at 133% of the target.

In addition to this, we also received $35,000 from the Brisbane Economic Development Agency (BEDA) for taking the meeting to Brisbane.

POC Members

Jun Yang, Hudson Institute of Medical Research & Monash University, VIC
Mitchell Lawrence, Monash University, VIC
A/Prof Anne Corbould, Launceston General Hospital, TAS
Dr James Cuffe, The University of Queensland, QLD
Dr Matti Gild, Royal North Shore Hospital, NSW
A/Prof Craig Harrison, Monash University, VIC
Dr James McNeil, Royal Adelaide Hospital, SA
Dr Luba Sominsky, Barwon Health/Deakin University, VIC
Dr Mitchell Sullivan, Mater Research Institute - University of Queensland, QLD
A/Prof Venessa Tsang, Royal North Shore Hospital and University of Sydney, NSW

We would like to thank the ESA Council, Ivone Johnson, the POC and LOC committee members, as well as ASN events for their support in ensuring that everyone was on track in the year leading up to the ASM.

Jun Yang & Mitchell Lawrence
Co-Chairs of the ESA/SRB/ENSA ASM Programme Organising Committee

ESA Clinical Weekend 2023

We were excited to welcome all delegates to Brisbane for the ESA Clinical Weekend 2023, held at Voco from the 24th to 26th of November. This year's meeting was held in a hybrid format with both in-person and virtual registrations.

The program featured twelve excellent registrar case presentations covering the themes of Adrenal disorders, Reproductive Endocrinology, and General Endocrinology. Each finalist received an award at the Saturday night dinner and the winner was awarded $1000 to cover publication costs for their case study in an approved journal, as well as registration for the 2024 Clinical Weekend.

We are grateful for the time and effort of our three judges Morton Burt, Ada Cheung, and Shane Hamblin who were left with the difficult task of choosing a winner. We also thank our case study reviewers who reviewed the 42 submissions, and all trainees who submitted an abstract. The selection of only twelve finalists was exceptionally difficult.

This year we had the privilege of having two incredible plenary speakers, Professor William Rainey and Professor Janet Hall, who delivered engaging presentations on Adrenal Androgens in Health and Disease and Management of Menopause respectively.

Delegates also enjoyed the different social functions and activities throughout the weekend. The welcome function was held at Voco, Brisbane on the Friday evening. The concept was a relaxed Friday night allowing delegates to catch up with colleagues over drinks.

The Saturday night dinner at the Rooftop Terrace of the Gallery of Modern Art (GOMA), was a truly magical evening, taking in the views of the Brisbane River at night, and the guests amazed and entertained by the magical talents of our entertainer.

Saturday afternoon activities included kayaking on the Brisbane River, abseiling at The Kangaroo Point Cliffs, distilling your own gin at the Brisbane Gin Distillery, and touring the GOMA or Queensland Museum. Enthusiastic delegates also participated in the Sunday morning walk or run through the beautiful Botanical gardens.

As of 16th November 2023, we had 285 in-person registrations and 42 virtual registrations. We are indebted to our sponsors Novo Nordisk, Merck and Ipsen, who have played an essential role in making this meeting possible. Finally, we thank the amazing team from ASN events, Jim Fawcett, Lieve Belsack, Sally Wills and Lydia Lazar for their support throughout the year.

Emily Brooks & Anjana Radhakutty
Co-Convenors of the 2023 ESA Clinical Weekend

ESA Seminar Meeting 2023

The Endocrine Society of Australia hosted the annual Seminar weekend in at the Grand Hyatt in Sydney from the 28th - 30 April 2023. With the ongoing appetite to move past the COVID restrictions of the previous years, the overwhelming feel of the meeting was of a joyful professional gathering. Both options of in-person and virtual attendance were available, and a record 630 delegates attended in total, of which approximately 210 were virtual.

The overarching theme of the 2023 meeting was metabolic medicine and obesity.

Inspiring keynote presentations were delivered by invited plenary speaker A/Prof Ania Jastreboff from Yale University, an eminent endocrinologist and obesity clinician researcher, who brought forward new considerations and discussed the future of obesity management.

The plenaries were complimented by symposia on lifestyle interventions in diabetes and obesity as well as risk management associated with diabetes, by our own internationally recognised Australian experts.

Finally, a panel of local experts along with A/Prof Jastreboff discussed clinical cases presented by registrars and this format was well received by the audience.

The academic program was strengthened by additional symposia on Endocrine Considerations in Oncology and Reproductive hormone considerations in specialised populations.

With advanced trainee needs in mind, we also initiated a new style of symposium with which to close the seminar meeting called “Show me the Evidence”, where highly experienced endocrinologists discussed the management of two common endocrine emergencies, namely hypercalcaemia and hyperthyroidism, with running commentary about the evidence (or lack of) about clinical management.

In addition to traditional in-person questions from the audience, all symposia included the option of submitting questions via Slido for the session chairs to facilitate. This proved to be overwhelmingly popular, enlightening and allowed for widespread audience participation.

ESA Seminar Meeting 2023

The social program was well attended across the weekend. The cocktail function on Friday night was a delightful opportunity to see many colleagues after a very long hiatus, enjoyed with a twinkling Darling Harbour backdrop and quality catering.

Saturday afternoon saw several endocrinologists, including the plenary speaker brave the Sydney Harbour bridge climb, while others opted for a harbour cruise or the Opera House tour. The conference dinner was attended by 130 delegates, who were also able to enjoy superb views of evening fireworks across the harbour. The Sunday morning walk made for a refreshing start to the final day of the meeting.

We initiated Slido polling at the end of each symposium as well the usual ASN Events requested feedback at the conclusion of the event.

Attendees provided overwhelmingly positive feedback for all aspects of the meeting, including the adoption of innovative education-based methods in the delivery of the program.

It was a pleasure to convene our first ESA Seminar meeting with ASN Events. Lieve Belsack, Jim Fawcett and their team communicated with us throughout and demonstrated impressive attention to detail as well as being lovely to work with.

We have been humbled by the generosity of our speakers, panellists and chairs and look forward to Darwin 26-28th April 2024 for another successful and very unique ESA Seminar Meeting.

Dr Stella Sarlos & Associate Professor Carolyn Allan
Co-Chairs of the 2023 ESA Seminar Meeting

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RECOGNITION OF MEMBERS

Recognition of Members

Australia Day Honours 2023

Professor Gail Risbridger
Member of the Order of Australia
For significant service to medical research
and administration, and to education.

Dr Senthil Thillainadesan

ESA are saddened to notify members of the recent passing of our esteemed colleague, Dr Senthil Thillainadesan.

Senthil joined the RPAH Endocrinology Department in 2018 as a second-year advanced trainee, from John Hunter Hospital. He was a quality health care team member and a conscientious worker, who had a gentle nature, and great humility. As an Endocrinology Advanced trainee, his ability to grasp complex clinical scenarios, synthesize key issues and formulate a management plan efficiently demonstrated maturity beyond his years.

Senthil proceeded to a PhD candidature in his final year of Endocrinology training, under Prof. David James and A/Prof. Samantha Hocking in David's metabolism laboratory in Charles Perkins Centre, the University of Sydney. During his PhD, Senthil studied the metabolic effects of dietary perturbations and cold exposure, by investigating energy balance, weight cycling in mouse models, and health outcomes. He collaborated in a publication in Cell Metabolism in January 2022, and published a systemic review and meta-analysis in Obesity Reviews in May 2022. He presented at national scientific meetings New Investigator sessions.

David James noted: "Senthil's intellect was as good as I have seen. His ability to grasp very complex concepts was extraordinary and you got the sense that his potential was boundless. I saw great excitement and love of science in him and you don't see that very often". Senthil graduated with his PhD in May 2023. He also collaborated with series of colleagues in hospital-based clinical research with national presentations and novel publication.

Senthil was highly respected by his colleagues and very well liked by his patients. After receiving his Fellowship, he was invited to join the Endocrinology & Metabolism Centre of RPAH Endocrinology Department as an Honorary Visiting Medical Officer. He had strong clinical interest in General Endocrinology and Metabolic bone disease. The Department was planning for Senthil to lead the metabolic bone health service, as a Staff Specialist.

Our thoughts are with Senthil's family and his friends at this time. The RPAH Department of Endocrinology held a memorial event on the morning of July 29th, 2023.

Dr Albert Hsieh & Professor Stephen Twigg

Richard D. Gordon AO, MD, PhD, FRACP

It is with great sadness that we farewell Richard D. Gordon, an Australian pioneer of endocrinology and hypertension research, who recently passed away after a brief illness, aged 89.

Born in Brisbane, Gordon's training as an endocrinologist included research fellowships in Melbourne (Bryan Hudson, The Alfred and Prince Henry's Hospitals, Monash University), Nashville, Tennessee (Vanderbilt University) under the inspirational Grant Liddle (Liddle's syndrome, leading authority on the adrenal gland) and the University of Adelaide (Basil Hetzel).

In addition to clinical work, these fellowships heavily involved laboratory bench work, setting up, validating and trouble-shooting new assays, which added an invaluable dimension to his critical judgement and expertise as a clinical scientist.

Following these fellowships, Gordon returned to Brisbane in 1970 to head the new section of the University of Queensland (UQ) Department of Medicine at Greenslopes Hospital. He established Endocrine Units at Greenslopes and Princess Alexandra Hospitals and a Hypertension Unit at Greenslopes Hospital which developed into an Endocrine Hypertension Research Centre. He accepted a Personal Chair in Medicine at UQ in 1982. The Greenslopes Unit achieved a reputation for meticulous diagnostic procedures, attracting referrals from throughout Queensland and other Australian centers.

Gordon painstakingly developed strict protocols for the diagnosis and management of primary aldosteronism which are still widely regarded as best practice today. He correctly predicted in 1992 (Lancet) that primary aldosteronism would often have a genetic basis.

His trainees included Robert Vandongen (Personal Chair in Medicine, University of Western Australia) and Michael Stowasser, Professor of Medicine and Director, Endocrine Hypertension Research Centre, UQ.

Richard D. Gordon AO, MD, PhD, FRACP

During over 50 years of clinical investigation, Gordon's scientific contributions included:

Description of the circadian rhythm for renin

Defining the role of the sympathetic nervous system in the regulation of renin and aldosterone in man

Demonstrating salt-sensitivity of a new syndrome of hypertension and hyperkalemia (Familial Hyperkalemic Hypertension or Gordon's Syndrome, named after Gordon by Hugh De Wardener in his textbook on renal disease in 1973), and defining the varying phenotype. Research into the genetic basis of this condition led to discovery of the role of WNK kinases and ubiquitin genes in the renal regulation of sodium balance

Drawing attention to a variety of aldosterone-producing adenoma responsive to angiotensin which is just as common as the unresponsive variety but previously overlooked, and describing in detail the biochemical, physiological and histological differences between these two tumors, predicting a genetic basis for these differences, which has recently been realized by new and exciting genetic discoveries

Describing a new variety of familial primary aldosteronism (familial hyperaldosteronism type II) for which the genetic basis has been elucidated; and

as a result of finding and curing primary aldosteronism in resistant hypertensives, showing that primary aldosteronism is much more common than previously thought, and the commonest potentially curable cause of hypertension.

Richard D. Gordon AO, MD, PhD, FRACP

Gordon published around 300 scientific papers in peer-reviewed journals, and 24 chapters in texts. He completed an MD thesis (1966) entitled "Circadian rhythms in man. A transverse study of some temporal aspects of adrenocortical and renal function" and a PhD thesis (1981) entitled "Systemic arterial hypertension: adrenocorticotrophin and aldosterone in pathophysiology".

Gordon was a member of the inaugural Executive Committee of the High Blood Pressure Research Council of Australia, and a member of the Endocrine Society of Australia, the (US) Endocrine Society and the International Society of Hypertension.

He served on numerous councils and committees and founded the Queensland Hypertension Association, a not-for-profit organization consisting predominantly of lay people, dedicated towards education and research in the fight against high blood pressure. Gordon was made an Officer in the General Division of the Order of Australia (AO) for services to medicine in the field of endocrine causes of hypertension in 1994.

With his many contributions to medicine and science, Gordon has truly earned the right to be recognised as a pioneer in all facets of hypertension, whether research, clinical practice or public awareness and education. He is survived by his wife Susan, daughters Susan, Sara-jane, and Christina, and son Michael.

Michael Stowasser MBBS, FRACP, PhD
Director of the Endocrine Hypertension Research Centre, Frazer Institute, University of Queensland

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AWARD WINNERS

2023 ESA Award Winners

As usual, the competition for the annual ESA awards was fierce in 2023, with a very high standard of applications received by the society. We congratulate all award recipients on their success.

Congratulations to ESA award winners:

ESA Young Investigator Scientific Article Award: Basic Science

Laura Porter

ESA Young Investigator Scientific Article Award: Clinical

Nicholas Russel

Gail Risbridger Junior Scientist Award

Georgia Cuffe

Bryan Hudson Clinical Award

Lachlan Angus

RACP ESA Research Establishment Fellowship in Endocrinology 2023

Brendan Nolan

2023 ESA Award Winners


Australian Women in Endocrinology Outstanding Abstract Award: Basic Science

Renea Taylor and Anne Nicole De Jesus


Australian Women in Endocrinology Outstanding Abstract Award: Clinical

Nayomi Perera and Kharis Burns


ESA Australian Women in Endocrinology Travel Awards

Rutu Dhavan and Lisa Raven

ESA Research Higher Degree Scholarship 2022

Josie McCarthy

ESA Clinical Weekend Case Study Award

Brenda Ta


ESA-SfE Exchange Award

Matti Gild and Rayzel Fernandes

2023 ESA Award Winners

ESA Outstanding Clinical Practitioner Award

Frances Milat

Clinical Endocrinology Journal Early Career Research Award

Matti Gild

ESA Clinical Study Poster Award

Emma Boehm

ESA Clinical Case Poster Award

Chrislyn Ng

Paul Lee Best Abstract Award

Moe Thuzar

ESA Postdoctoral Award 2022

Sarah Catford

2023 ESA Award Winners

ESA Higher Degree Travel Scholarship 2022

Elisabeth Ng

ESA Ken Wynne Memorial Postdoctoral Research Award 2022

Kelly Short

ESA IPSEN International Travel Grant Award

Lachlan Angus

Elisabeth Ng

Annabelle Warren

ESA Asia/Oceania Travel Support Scheme

Muthukumar Sankaran

Joon Ho Moon

Tharaka Gayaththri Athukorala

Min Kyung Lee

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AWARD WINNERS' REPORTS

ESA Young Investigator Scientific Article Award

The ESA Young Investigator Scientific Article Award is made annually to recognise the best scientific paper published in the 12-month period preceding the closing date for abstracts for the Annual Scientific Meeting by an active member of the Endocrine Society of Australia early in their career.

I am honoured to be the recipient of the 2023 ESA Young Investigator Scientific Article Award for my publication in Nature Communications titled *Low-dose carboplatin modifies the tumor microenvironment to augment CAR T cell efficacy in human prostate cancer models*.

This work was conducted by a collaboration between the Monash Biomedicine Discovery Institute and Peter MacCallum Cancer Centre's Immunology Program. I would like to thank ESA for the opportunity to present this work at the 2022 Annual Scientific Meeting in Brisbane on behalf of my co-authors.

Prostate cancer is the most common cancer in Australian males and a leading cause of cancer-related death. New treatments are urgently needed for patients with advanced cases. In CAR T cell therapy a patient's immune cells are isolated and re-engineered to recognise and kill cancer cells. CAR T cell therapy has revolutionised the treatment of several cancers, particularly haematological malignancies. However, this success has not yet been extended to solid tumours. Many barriers limit CAR T cell efficacy in solid tumours, including the hostile tumour microenvironment that prevents CAR T cells penetrating and surviving within the tumour.

This work provides preclinical proof-of-concept evidence that carboplatin can be used as a modulating agent to improve CAR T cell immunotherapy

Our goal is to identify modulating agents that reprogram the tumour microenvironment to make it receptive to CAR T cell therapy, ultimately providing new treatment strategies for patients with advanced prostate cancer.

In this study, we treated prostate tumours with the chemotherapy carboplatin prior to CAR T cell administration. Carboplatin induced a cascade of changes within the tumour microenvironment that improved CAR T cell recruitment and effector function, ultimately resulting in tumour eradication.

This work provides preclinical proof-of-concept evidence that carboplatin can be used as a modulating agent to improve CAR T cell immunotherapy, and demonstrates that combination treatment strategies can optimise CAR T cell therapy for the treatment of prostate cancer.

I am grateful to ESA for this award, and their ongoing support throughout my research career to date. I would like to recognise the contributions of the Prostate Cancer Research Group at Monash University and the Cancer Immunology Program at Peter MacCallum Cancer Centre, particularly first co-author Dr Joe Zhu and senior co-authors Professor Gail Risbridger and Professor Renea Taylor. I would also like to acknowledge funding from NHMCR, Cancer Council Victoria and the Prostate Cancer Foundation of Australia.

Laura Porter

ESA Young Investigator Scientific Article Award

The ESA Young Investigator Scientific Article Award is made annually to recognise the best scientific paper published in the 12-month period preceding the closing date for abstracts for the Annual Scientific Meeting by an active member of the Endocrine Society of Australia early in their career.

Thank you to the ESA for recognising our article with this award.

The paper, published in European Journal of Endocrinology was entitled *Effects of oestradiol treatment on hot flushes in men undergoing androgen deprivation therapy for prostate cancer: a randomised placebo-controlled trial*.

My co-authors were Prof Rudolf Hoermann, A/Prof Ada Cheung, Prof Jeffrey Zajac, and Prof Mathis Grossmann.

This article reports results of a clinical trial designed to examine the effects of oestradiol on hot flushes in men in the absence of testosterone.

The results of the trial confirmed the hypothesis of a clinical effect of assignment to oestradiol to reduce hot flush frequency in men with castrate testosterone due to androgen deprivation therapy for prostate cancer. Transdermal oestradiol could therefore be considered as a treatment option for men with a high burden of hot flushes in whom other treatments have failed.

The results of the trial confirmed the hypothesis of a clinical effect of assignment to oestradiol to reduce hot flush frequency in men with castrate testosterone due to androgen deprivation therapy for prostate cancer.

I conducted this trial as part of my PhD. The trial was funded by an NHMRC grant to Professor Mathis Grossmann. Prof Grossmann and Prof Zajac were my supervisors in this work, and I am very grateful for their support and assistance over many years. I am also grateful to the ESA which has a strong record in supporting early career members, with this award being just one example.

Nicholas Russell

ESA Gail Risbridger Junior Scientist Award

The ESA Gail Risbridger Junior Scientist Award recognises the best basic or translational science presentation at the Annual Scientific Meeting by an advanced trainee or higher degree candidate.

I am honoured to have received the 2023 Gail Risbridger Junior Scientist Award at the Endocrine Society of Australia's Annual Scientific Meeting in Brisbane, for my work titled "Androgen receptor expression dictates response to Bipolar Androgen Therapy in patient -derived models of advanced prostate cancer".

Traditionally, prostate cancer is treated with androgen deprivation therapy. This is because prostate cancer is a hormone-dependent cancer that relies heavily on hormones, particularly androgens, for its growth. However, prostate cancer almost always adapts to androgen deprivation therapy, resulting in the emergence of advanced disease that requires additional treatment and threatens quality of life.

Bipolar Androgen Therapy (BAT) is a potential new treatment for advanced prostate cancer that redefines the treatment landscape for this disease. Rather than removing androgens, BAT treats hormone-ablated patients with high-dose testosterone therapy. This causes testosterone levels in the blood to rapidly spike, then gradually decline back to very low levels. With consecutive treatments, patients cycle between polar extremes in androgen levels.

This exposes the vulnerability of prostate cancer to extremes in androgen levels and has shown to improve the quality of life for patients with advanced disease.

While clinical trials of BAT are promising, only ~30% of patients respond to this treatment. It is unclear why some patients respond to BAT while others do not, partly because the mechanisms of BAT are still poorly defined. My research aims to identify features of advanced prostate cancer tumours that respond to BAT versus those that do not, which may help us to better-select patients and improve responses in clinical trials. To do this, we have used patient tumours sourced from the Melbourne Urological Research Alliance and have treated them with BAT. We have identified some tumours that are more sensitive to BAT than others, and plan to use these tumours to study the mechanisms of BAT in advanced prostate cancer.

I would like to thank the Endocrine Society of Australia for organising this meeting and for providing me the opportunity to present my work. I would also like to extend my gratitude to my PhD supervisors Dr Mitchell Lawrence, Professor Renea Taylor, and Professor Gail Risbridger, along with members of the Prostate Cancer Research Group at Monash University, for their continued support throughout my PhD and in preparation for this meeting. Further to Professor Risbridger's guidance as my PhD supervisor, this award also provides me with ongoing mentorship to help establish connections within the scientific community and navigate my career beyond my PhD. Finally, I would like to acknowledge the patients and their families who support the Prostate Cancer Research Program and make this work possible. Congratulations to the ESA for a successful meeting, and best wishes for 2024.

Georgia Cuffe

Bryan Hudson Award

The Bryan Hudson Clinical Endocrinology Award will recognize the best clinical research presentation at the Annual Scientific Meeting by an active member of the Endocrine Society of Australia early in their career.

I am extremely honoured to be the recipient of the 2023 Bryan Hudson Clinical Endocrinology Award for the presentation "The effect of cyproterone acetate and spironolactone on breast development in transgender women: a randomised controlled trial".

There is a shortage of well-designed clinical trials to inform gender affirming hormone therapy regimens. As such, treatment guidelines are largely based on observational studies or expert opinion. Anti-androgen medications such as spironolactone and cyproterone acetate are commonly used with estradiol to cause feminisation and work through different mechanisms.

Suppression of serum total testosterone concentration is often used a surrogate measure of efficacy, but this approach is overly simplistic given both spironolactone and cyproterone acetate antagonise the androgen receptor.

My randomised controlled trial demonstrated that there was no difference in breast development in participants treated with spironolactone or cyproterone acetate at six months.

Safety was also demonstrated with no clinically significant between group difference in depression, hyperkalaemia, nephrotoxicity or hepatotoxicity.

My randomised controlled trial demonstrated that there was no difference in breast development in participants treated with spironolactone or cyproterone acetate at six months.

This data provides clinicians with confidence that anti-androgen choice does not appear to influence outcomes of feminisation, and as such drug selection should be based on discussion of different side effect profiles and patient preference. Further research is needed to optimise outcomes with feminising hormone therapy.

I am very grateful to the ESA for this prestigious award, and for the support of my supervisors A/Prof Ada Cheung and Prof Jeffrey Zajac. This research was supported by the Commonwealth Government Research and Training Program Scholarship, NHMRC Early Career Fellowship #1143333, NHMRC Investigator Grant #2008956, RACP Cottrell Research Establishment Fellowship, ESA Postdoctoral Award, Austin Medical Research Foundation and Viertel Charitable Foundation.

Lachlan Angus

RACP ESA Research Establishment Fellowship in Endocrinology

The purpose of this award is to further medical research in endocrinology.
This Fellowship is made available by a grant from the Endocrine Society of Australia, matched with funds provided by Fellows of the RACP.

Dr Brendan Nolan is an endocrinologist and clinician researcher with research and clinical interest in improving health outcomes for transgender and gender-diverse individuals undergoing gender-affirming hormone therapy.

During his PhD, Brendan examined the safety and efficacy of gender-affirming hormone therapy, including undertaking the first randomised controlled trial demonstrating that full-dose testosterone therapy reduces gender dysphoria, depression, and suicidality in transgender and gender-diverse individualsseeking masculinisation. He was awarded the 2022 Bryan Hudson Clinical Endocrinology Award for this study.

There remains a dearth of evidence underlying gender-affirming hormone therapy regimens in individuals with a non-binary gender identity. The RACP-ESA Fellowship will support Brendan to commence arandomised controlled trial evaluatinglow-dose testosterone therapy on depression, gender dysphoria, suicidality, and quality of life in non-binary individuals.

Brendan Nolan

Project

A randomised controlled trial of low-dose testosterone therapy on depression, gender dysphoria, suicidality, and quality of life in non-binary individuals

Australian Women in Endocrinology Outstanding Abstract Award

This award recognises outstanding scientific abstracts submitted by women to the ESA Annual Scientific Meeting. This award is supported by the Australasian Branch of Women in Endocrinology.

It is an honour to receive the ESA/AWE Outstanding Abstract Award for my presentation titled "Multi-substrate metabolic tracing reveals dependency on fatty acid metabolism in human prostate cancer."

This research spans the intersection of hormone-dependent cancers and cancer metabolism, addressing challenges that hinder the implementation of innovative metabolic therapies for prostate cancer. Our research strives to deepen the understanding of metabolic vulnerabilities in prostate cancer, while considering the molecular diversity inherent in human disease, to advance the development of novel therapeutic approaches.

our findings affirmed that targeting the uptake and oxidation of fatty acids holds promise as therapeutic strategies to slow or delay the progression of human prostate cancer.

Utilizing Monash Urological Research Alliance (MURAL) patient-derived xenograft (PDX) models and PDX-derived organoids, we aimed to transition the current understanding of prostate cancer metabolism toward a translational perspective. The study employed metabolomic tracing techniques and functional genomics, including CRISPR KO screening in various prostate cancer models.

This approach is noteworthy as it diverges from prior studies that relied solely on transcriptomics or proteomics profiling, methods prone to indirect and misleading conclusions by overlooking allosteric modulation of metabolic enzymes.

Our team demonstrated that, irrespective of disease stage, human prostate cancer efficiently utilizes multiple metabolic substrates, such as glucose, fatty acids, and glutamine. Although substantial heterogeneity exists across individual tumour types, our findings affirmed that targeting the uptake and oxidation of fatty acids holds promise as therapeutic strategies to slow or delay the progression of human prostate cancer.

I extend my gratitude to co-senior author Professor Matthew Watt, and PhD student Mr. Gio Fidelito for their significant contributions to this work, and acknowledge funding support from the Cancer Council of Victoria. I am grateful to the ESA for providing the opportunity to present this research, as well as to the Australasian branch of Women in Endocrinology (AWE) for this abstract award.

Renea Taylor

Australian Women in Endocrinology Outstanding Abstract Award

This award recognises outstanding scientific abstracts submitted by women to the ESA Annual Scientific Meeting. This award is supported by the Australasian Branch of Women in Endocrinology.

It is a great delight and honour to have been selected as a recipient of the Australian Women in Endocrinology Outstanding Abstract Award for my project, "The effect of menstrual cyclicity on brown adipose tissue activity in eumenorrheic women". I would like to give my deepest gratitude to the Endocrine Society of Australia for this prestigious award.

Female sex steroids, 17β-estradiol and progesterone, are not only crucial for the regulation of the female reproductive physiology, but also in energy homeostasis. Brown adipose tissue (BAT) is shown to not only influence body weight, but also alter metabolic health. Across species, BAT activity is greater in females than in males; however, the variation of BAT activity across the menstrual cycle has not been carefully elucidated in clinical settings.

In our study, we investigated whether BAT activity changes across two specific stages of the menstrual cycle (follicular and luteal phases), whether this affects glucose tolerance, and if this is in correlation with 17β-estradiol and progesterone levels.

Our findings suggest that there are innate variations in BAT activity throughout the phases of the menstrual cycle. More importantly, BAT thermogenesis is attenuated during the luteal phase of the menstrual cycle.

In response to a glucose load, decreased BAT activity coincided with mildly impaired glucose tolerance.

> innate variation in brown adipose tissue activity in women across the menstrual cycle may not only influence energy expenditure, but also glycaemic control.

Therefore, the innate variation in BAT activity in women across the menstrual cycle may not only influence energy expenditure, but also glycaemic control. Our findings show little effect of both 17β-estradiol and progesterone on adaptive thermogenic responses in women of the reproductive age. Indeed, further studies are required to elucidate the role of female sex steroids in the control of thermogenic activity.

I would like to acknowledge and thank my supervisor, Dr Belinda Henry, who has given me a tremendous amount of support throughout my post-graduate studies. I would also like to thank all the people involved in the project, especially my participants for their wonderful attentiveness and dedication to this study.

Anne Nicole De Jesus

Australian Women in Endocrinology Outstanding Abstract Award

This award recognises outstanding scientific abstracts submitted by women to the ESA Annual Scientific Meeting. This award is supported by the Australasian Branch of Women in Endocrinology.

It is an incredible honour to receive the ESA Australian Women in Endocrinology Outstanding Abstract award for my research "Glucagon stimulation testing: Clinical and biochemical features of growth hormone deficiency".

This retrospective observation study investigated individuals with suspected growth hormone deficiency referred to Royal Melbourne Hospital for glucagon stimulation testing. To access Growth Hormone replacement, the Australian PBS requires all adults to have deficiency confirmed on stimulation testing.

We hypothesised that growth hormone deficiency may be accurately determined from baseline fasting and clinical characteristics and lengthy stimulation testing may be avoided.

fasting morning growth hormone was highly predictive of glucagon stimulation results and should be performed prior to referral as normal results may negate the need for testing at all

Amongst our findings, fasting morning growth hormone was highly predictive of glucagon stimulation results and should be performed prior to referral as normal results may negate the need for testing at all. Clinical features of previous irradiation, craniopharyngioma and over three anterior axis deficient were highly predictive of growth hormone deficiency.

We found in patients with these high risk features that stimulation testing could reliably be truncated to 120 minutes. Currently further work has commenced to verify this data in an independent adult and paediatric population.

I would like to particularly acknowledge my supervisor A/Prof Cherie Chiang for her guidance and support, as well as my other supervisors A/Prof John Wentworth, A/Prof Chris Yates, Dr Angeline Shen, A/Prof Fourlanos. I would like to extend my gratitude to Jodie Lai and the RMH Department of Diabetes and Endocrinology for their ongoing support. Thank you to the ESA for the opportunity to present this research.

Nayomi Perera

ESA Australian Women in Endocrinology Travel Awards

The purpose of this award is to provide financial support to younger women involved in Endocrine-related training and/or research to present their work at the 2023 USA ENDO Meeting.

I'd like to express my gratitude to the Endocrine Society of Australia for granting me the Australasian Women in Endocrinology Travel Award.This support enabled me to showcase my research on 'activatable glucocorticoid receptor agonists as treatments for the consequences of preterm birth' at ENDO 2023 in Chicago, USA, held in June 2023.

Glucocorticoid (GC) signalling is essential for normal fetal organ development. During late gestation a surge of endogenous GCs contributes to organ maturation. This is particularly important for the lung maturation,where thinning the mesenchymal tissue causes an increase in gas exchange surface area and decreases diffusion distance that is critical for lung function after birth.

There are however growing concerns that systemic exposure to powerful synthetic GCs such as Dex is associated with detrimental side effects, particularly in the developing fetal brain. We are currently assessing novel activatable and potentially partially selective agonists of the glucocorticoid receptor (GR) as new antenatal steroid treatments of preterm birth.

One such GR agonist is a steroid prodrug called ciclesonide (Cic) that is activated in vivo to the GR agonist, Des-Cic, by a family of intracellular serine esterase enzymes, called carboxylesterases (Ces).

Our data suggests that Cic is able to regulate a respiratory genomic signature similar to Dex.

We have previously demonstrated that postnatal administration of Ciclesonide and Dex drive similar stimulation of important preterm lung-specific biomarkers but in contrast to Dex, Cic produced no postnatal growth retardation, no reduction in brain weight, and no alteration in levels of neural myelination.

Our data suggests that Cic is able to regulate a respiratory genomic signature similar to Dex. Further studies will examine the effects of Cic vs Beta and Dex in mouse models of preterm birth, particularly in the context of unwanted side-effects in neural development.

I would like to thank all the people involved in this project, in particular my PhD supervisors, Prof. Timothy Cole and A.Prof Megan Wallace for theirunwavering support and guidance throughout my PhD. Additionally, I'm grateful to the Endocrine Society of Australia for their continuous support during my PhD and allowing me opportunities to present my research findings.

Rutu Dhavan

ESA Australian Women in Endocrinology Travel Awards

The purpose of this award is to provide financial support to younger women involved in Endocrine-related training and/or research to present their work at the 2023 USA ENDO Meeting.

Thank you to the Endocrine Society of Australia and the Australasian Branch of Women in Endocrinology for support via the ESA Australian Women in Endocrinology (AWE) Travel Award. This award allowed me to present my abstract entitled 'Effect of SGLT2 Inhibition on Metabolic, Cardiac and Renal Outcomes in Heart Transplant Recipients (EMPA-HTx study): Protocol and Study Design' at the USA Endocrine Society annual scientific meeting (ENDO 2023) in Chicago.

This was my first international conference and I enjoyed the opportunity to present research that forms part of my PhD. I also attended the Women in Endocrinology Dinner at ENDO 2023 and the Early Career Forum. It was lovely to meet and network with likeminded endocrinologists and trainees from around the world.

My PhD focuses on the potential benefits of sodium glucose co-transporter 2 (SGLT2) inhibitors in heart transplant recipients. Heart transplantation is a life-saving treatment of end-stage heart failure. Immunosuppression medication, required to prevent rejection, can result in adverse metabolic effects such as diabetes and weight gain, myocardial fibrosis, and renal impairment. SGLT2 inhibitors may have positive effects on all of these post-transplant complications.

I presented the protocol for the recently commenced randomised, placebo-controlled trial of empagliflozin 10 mg daily in recent heart transplant recipients. The overall aim of this project is to study safety and efficacy, with the primary end point of improvement in glycaemic control assessed by change in glycosylated haemoglobin (HbA1c) and/or fructosamine. Secondary endpoints include cardiac fibrosis assessed by cardiac magnetic resonance, and renal function assessed by serum creatinine and urine albumin creatinine ratio. One hundred recent transplant recipients will be commenced on the study medication within 6-8 weeks of transplantation with follow up until 12 months after transplantation.

This study will, for the first time, determine the efficacy and safety of SGLT2 inhibitors in heart transplant recipients.

I would like to extend my gratitude to my PhD Supervisors Professor Jerry Greenfield, Dr Christopher Muir and Dr Andrew Jabbour. This work is a collaboration between doctors from the Department of Diabetes & Endocrinology and the Department of Heart Transplantation at St Vincent's Hospital Sydney, together with the Garvan Institute of Medical Research and the University of New South Wales. I hope to present the results of this exciting trial at future meetings. Thank you once again to the ESA for this invaluable opportunity.

Lisa Raven

ESA Research Higher Degree Scholarship 2022

The purpose of the Scholarship is for research in any area of endocrinology.

I am honoured to be awarded the 2023 ESA Research Higher Degree Scholarship to support my PhD on primary aldosteronism in patients with transient ischaemic attack (TIA) or stroke (PAinTStroke). I am also very grateful to the ESA for a Travel Grant to attend the 2023 Annual Scientific Meeting where I was able to share some of my PhD work in oral and poster presentations.

Primary aldosteronism (PA) is the most common endocrine cause of hypertension. People with hypertension due to PA have 2-3 fold higher risk of adverse cardiovascular events including stroke compared to those with blood pressure matched essential hypertension. Targeted treatment with mineralocorticoid receptor antagonists or surgical resection of an aldosterone producing adenoma can effectively reduce blood pressure and ameliorate the increased cardiovascular risk.

To demonstrate the extent of the problem, I conducted a systematic review and meta-analysis of the prevalence of PA in patients with TIA or stroke. To date, the prevalence has only been evaluated in three studies, all in Asia/East Asia. The meta-analysis revealed a pooled prevalence of PA in patients with stroke or TIA of 5.8% overall, 12.9% in adults <40yo with TIA or stroke, and 21.2% in adults <40yo with a history of hypertension (manuscript under review, Frontiers in Endocrinology).

I had the pleasure of presenting a lightning oral presentation on my work 'Screening for primary aldosteronism is underutilised in acute stroke and transient ischaemic attack: a multi-centre cohort study' at the ESA Annual Scientific Meeting 2023.

This retrospective cohort study was conducted at two tertiary health services in Melbourne and evaluated the proportion of patients admitted for stroke or TIA who had an indication for PA testing according to the Endocrine Society and compared this with the proportion who were tested. We screened 1,110 patient records and excluded 710 due to missing data.

I aim to determine the prevalence of primary aldosteronism in patients with transient ischaemic attack and stroke on a local level and identify factors which are associated with a diagnosis of primary aldosteronism.

ESA Research Higher Degree Scholarship 2022

Of the 400 patients analysed, 298 (75%) had a history of hypertension or were hypertensive at the time of discharge and 75 (19%) had indications for PA testing. Only 8 (2%) were considered for PA testing, of whom seven had the aldosterone-to-renin ratio (ARR) measured and one had an adrenal CT. Six of the seven patients with an ARR were on interfering medications which can cause false negative results. One patient was lost to follow up and no patients underwent formal testing. In conclusion, a quarter of patients admitted with stroke or TIA and hypertension have an indication for PA testing. However, few are ever tested appropriately.

Appropriate testing for PA in this population may identify a potentially curable cause of hypertension, improve blood pressure control, and reduce stroke recurrence.

In this prospective study I will also evaluate the most appropriate time for PA testing after the occurrence of stroke or TIA, and the respective diagnostic thresholds at different time points and on different medications.

The next step of my PhD is to prospectively test for PA in patients admitted with TIA or stroke. I aim to determine the prevalence of PA in patients with TIA and stroke on a local level and identify factors which are associated with a diagnosis of PA.

In this prospective study I will also evaluate the most appropriate time for PA testing after the occurrence of stroke or TIA, and the respective diagnostic thresholds at different time points and on different medications.

I am sincerely grateful to the ESA for their generous support. I would like to thank the team at the Centre for Endocrinology and Metabolism at the Hudson Institute of Medical Research and my PhD supervisors Associate Professor Jun Yang and Professor Thanh Phan for their support and guidance. I would also like to acknowledge the Australian Government for their support through an Australian Government Research Training Program (RTP) Scholarship.

Josie McCarthy

ESA Clinical Weekend Case Study Presentation

Endocrinology advanced trainees are invited to submit a single case report each for presentation to the ESA Clinical Weekend meeting.

Refractory hypercalcaemia secondary to metastatic parathyroid carcinoma treated with immunotherapy

Parathyroid carcinoma (PC) is a rare endocrine malignancy with an incidence of 6 cases per 10 million population (1). It accounts for 0.5-2% of cases of primary hyperparathyroidism (2). Metastatic PC carries a guarded prognosis with a median survival of 36 months (5) with refractory hypercalcaemia being the leading cause of mortality. We describe a case of refractory hypercalcaemia secondary to progressive metastatic PC with a dramatic biochemical and clinical response to nivolumab therapy.

A 64-year-old retiree presented with dysphonia in late-2021 and was referred to an ENT surgeon for assessment. She was diagnosed with left vocal cord palsy secondary to a nodular lesion arising from the left lobe of her thyroid gland identified on CT.

Notably, she had primary hyperparathyroidism (PTH 16.8 pmol/L, RI 1.6-6.9) and mild hypercalcaemia (corrected calcium 2.76 mmol/L, RI 2.10-2.60). Parathyroid scintigraphy identified an autonomous left inferior parathyroid nodule.

Her medical history included a parathyroidectomy (2005) for a histologically benign left inferior parathyroid adenoma, and breast cancer (2012) treated with lumpectomy and three years of adjuvant tamoxifen treatment. She was diagnosed with osteoporosis in 2021, (total hip T-score of -2.0 SD and lumbar spine T-score of -2.7 SD) and received one dose of zoledronic acid 5 mg intravenously. She was functionally independent with an ECOG score of 0.

A fine needle aspirate of the nodule was consistent with a parathyroid neoplasm with positive staining for PTH, MNF116, GATA 3 and negative TTF1, CD3, CD5 and CD117. She underwent left hemithyroidectomy and left central neck dissection.

Histopathology revealed a PTH-positive, high-grade carcinoma (Ki67 80%) with evidence of capsular, perineural and lymphovascular invasion. One of seven lymph nodes were positive. Her calcium and PTH normalised following surgery. A post-operative PET scan demonstrated moderate metabolic activity in the left thyroid bed and a left supraclavicular lymph node.

External beam radiotherapy was administered to the thyroid bed. No germline mutations were identified on genetic testing.

Six months later, blood tests revealed PTH-dependent hypercalcaemia (corrected calcium 2.74 mmol/L, PTH 14.5 pmol/L).

ESA Clinical Weekend Case Study Presentation

Subsequent MRI identified multiple new cerebral metastases and a PET-CT demonstrated an avid lesion in her right ilium.

Cinacalcet was commenced and further radiotherapy was administered to sites of metastatic disease. MDT discussions did not identify any systemic treatment options. Molecular genomic studies revealed low microsatellite instability, however there was a high tumour mutation burden suggesting a possible role for immunotherapy.

Over the subsequent five months, the patient developed worsening hypercalcaemia, refractory to escalating doses of zoledronic acid and denosumab. Anti-resorptive treatment was initially given intermittently for hypercalcaemia before intensifying to fortnightly alternating zoledronic acid 4mg intravenously and denosumab 120 mg subcutaneously.

She required two hospital admissions with a peak corrected calcium of 3.82 mmol/L and PTH levels consistently above 100 pmol/L. Cinacalcet was ceased due to persistent nausea and anorexia.

The patient briefly trialled temozolomide, based on a favourable case report. Despite this, significant disease progression ensued with new nodal, pulmonary, and skeletal metastases. The patient opted to self-fund nivolumab, an anti-PD1 monoclonal antibody that inhibits immune checkpoint, thus upregulating T cell recognition of malignant cells. Less than 4 weeks after commencing nivolumab and one day prior to her second cycle, her PTH declined from 163.8 pmol/L to 5.3 pmol/L and corrected calcium from 3.90 mmol/L to 2.13 mmol/L.

Her nausea, lethargy, and constipation resolved. She was commenced on calcium carbonate 600mg daily with close monitoring of her calcium levels as she had received denosumab two weeks earlier and zoledronic acid four weeks earlier. PTH was at its lowest level since her initial surgical resection 18 months ago. FDG PET-CT is planned to assess radiological response to treatment in 2 months.

Discussion

PC is a rare malignancy that may occur sporadically (90%) or in association with inherited cancer syndromes (10%) including hyperparathyroidism-jaw tumour syndrome, MEN1, or MEN2A (9). The loss of tumour suppressor gene CDC73 accounts for 70% of sporadic cases. This mutation is rarely found in benign pituitary adenomas, suggesting PC may arise de novo (9).

Challenges exist for both diagnosis and management of PC. PC can be difficult to distinguish from benign parathyroid lesions, both of which cause primary hyperparathyroidism, and definitive diagnosis requires histological analysis.

Clinical features thought to favour PC include ALP > 285 IU/L, ionised calcium >1.77 mmol/L, parathyroid lesions > 3cm or PTH levels more than three times the upper limit of normal (9). Fine needle aspiration is generally not recommended due to the risk of malignant parathyromatosis.

ESA Clinical Weekend Case Study Presentation

PC carries a poor porgnosis and there are limited treatment options beyond primary resection. While antiresorptives and calcimimetics can provide initial short-term control of hypercalcaemia, disease progression often leads to severe refractory hypercalcaemia. Surgery remains the mainstay of treatment of localised disease, however the optimal surgical approach (localised excision vs en block resection) remains unclear (4).

There is limited evidence for radiotherapy, systemic chemotherapy or immunotherapy with PC generally considered to be "radioresistant" and "chemoresistant". A systematic review (5) of chemotherapy-treated patients with PC, reported a progression-free survival of 10-months with the combined use of fluorouracil, cyclophosphamide and dacarbazine in four patients. Patients who received other chemotherapy regimens experience partial or no response (5).

Evidence for the use of immunotherapy is sparse. There have been three case reports from 2004 that investigated PTH immunisation, a novel form of immunotherapy to induce antibody formation against human PTH. One Japanese patient died due to disease progression while receiving treatment (6); the other two case reports described 24 months and 12 years progression free survival, respectively (7, 8). These treatments have been largely superseded by modern immunotherapeutic agents.

There has been one case report of checkpoint immunotherapy for the treatment of metastatic PC (3).

Pembrolizumab (anti-PD-1 antibody), administered over four months (five cycles), achieved a partial radiological response (60% reduction in pulmonary metastases) in a patient with Lynch Syndrome. There was a complete biochemical response (normalisation of serum calcium and PTH) before it was discontinued due to severe immune-related colitis. Despite cessation, disease volume and biochemistry remained stable 24 months later (3, 5).
To our knowledge, this is the first case report to detail the use of nivolumab for the treatment of metastatic PC. Immunotherapy may be an emerging treatment option, informed by individual cancer genomics.

Take home messages:

- PC is a rare endocrine malignancy that causes PTH-mediated hypercalcaemia.
- Consider PC as a diagnosis in cases of primary hyperparathyroidism with:
- ALP > 285 IU/L, ionised calcium >1.77
- nmol/L, parathyroid lesions > 3cm, or PTH > 3x ULN.
- Limited treatment options exist, particularly for metastatic disease which carries a guarded prognosis.
- Management of hypercalcaemia is with antiresorptives and calcimimetics however break-through hypercalcaemia will invariably occur with disease progression.
- Immunotherapy may be a treatment option depending on cancer genomics.

Dr Brenda Ta is currently a first year endocrinology advanced trainee at Prince of Wales Hospital in Sydney. She will be completing her second year of training at St Vincent's Hospital.

ESA Clinical Weekend Case Study Presentation

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ESA-SfE Exchange Award

The purpose of this Exchange Award is to foster the development of collaborative research projects by enabling members of the Endocrine Society of Australia (ESA) and the Society for Endocrinology (SfE) to visit overseas researchers to initiate further studies.

I am incredibly honoured to have been awarded the inaugural Endocrine Society of Australia-Society for Endocrinology Exchange Award. I would like to thank both societies for their generosity and thank the ESA for the opportunity to present my work at the 2023 ESA-SRB Annual Scientific Meeting. I'm also grateful to the Risbridger group at Monash University, especially Prof. Gail Risbridger, Prof. Renea Taylor and Dr. Mitchell Lawrence, for hosting me at their lab for the duration of this 4-week exchange program.

Title

Profiling of therapy resistance-associated enhancer RNAs in Patient Derived Xenograft (PDX) models of prostate cancer

Background

Androgen receptor (AR) signalling is the main driver of prostate cancer (PCa) and thus the main therapeutic target in this disease. AR directed therapies are initially successful, but therapy resistance eventually emerges, resulting in castration resistant prostate cancer (CRPC). The acquisition of therapy resistance is associated with changes in binding of the AR to cis-regulatory enhancer elements within the genome. Enhancers elements are essential for regulating the rate of transcription of target genes and are themselves transcribed, producing enhancer RNA (eRNA), which are increasingly being recognized for their role in enhancer function.

While eRNAs have been shown to be transcribed from critical AR bound enhancers, their role in AR-regulated gene expression, PCa progression and therapy resistance remains largely unknown.

Since eRNAs are not readily detectable by conventional RNA-seq, we have previously used Global Run On (GRO) sequencing to identify differences in eRNA transcriptomes between pairs of prostate cancer cell lines that are sensitive or resistant to AR directed therapies. These eRNA transcriptomes were integrated with publicly available chromatin immunoprecipitation (ChIP) and chromatin interaction datasets to annotate resistance-associated eRNAs that may play a role in PCa therapy resistance.

The objective of this exchange proposal was to maximise the translational relevance and impact of our previous work by leveraging near-clinical patient derived xenograft (PDX) models of PCa from the Melbourne Urological Research Alliance (MURAL) collection to validate results from cell line models. This work is to form the basis for further functional studies on the role of eRNAs in PCa by using organoids derived from PDXs.

This exchange has led to generation of data that will contribute to current knowledge on mechanisms underlying the acquisition of resistance against androgen receptor directed therapy.

ESA-SfE Exchange Award

Aims

This project had two aims :

- To profile AR resistance-associated eRNA expression in PDX models of prostate cancer and assess their association with disease progression and/or other clinical outcomes.

- To gain proficiency in growing organoid cultures derived from PDXs and transfer PDX tissue and/or organoids to home lab for further functional studies.

Results

In this study, I assessed the expression of six eRNA candidates using qPCR in a subset of 21 PDXs from the MURAL cohort. The subset encompassed PDXs from patients across the disease trajectory of prostate cancer from treatment-naïve to metastatic castrate-resistant disease, and included samples with different pathological subtypes, treatments, and androgen receptor status. My results indicate that eRNAs are expressed at different levels in PDXs and may be associated with clinical or pathological features. Of the eRNAs tested, one candidate was found to be significantly associated with disease progression and treatment status. eRNA expression results were also integrated with available PDX transcriptomic data to identify potential target genes. Genes that were identified as most significantly correlated with eRNA expression from this analysis are now being analysed to understand their role in prostate cancer progression.

During my time at the host lab, I had the opportunity to observe PDX subculture and organoid culturing techniques, which will enable me to work with these materials in my home lab. We are currently in the process of formalizing a materials transfer agreement to transfer PDX and organoid material to my home lab for further studies.

Summary

This exchange has led to generation of data that will contribute to current knowledge on mechanisms underlying the acquisition of resistance against AR directed therapy. It will also maximise the translational impact of my work through the incorporation of more clinically relevant models into my project. Additionally, I have benefited enormously throughout the exchange through day-to day interactions with researchers at the host lab and networking opportunities both at the host lab and the ESA-SRB Annual Scientific Meeting.

Rayzel Fernandes

8

SEED GRANT REPORTS

Seed Grant Report

The purpose of this award is to provide funding to support early stage research or small research projects by a mid-career ESA member. These grants may be used for research in any area of endocrinology. The research must be conducted in Australia.

Interactions between androgens and the renin-angiotensin-aldosterone system in the pathophysiology of metabolic syndrome

Recipient: Pieter Jansen

Australia has seen a large increase ofthe prevalence of type 2 diabetes mellitus (T2DM) and the burden of this disease over the last three decades [1]. This trend is likely attributable to temporal changes in demographics, modifiable and non-modifiable risk factors and an increase in the co-prevalence of multiple metabolic risk factors, also known as the Metabolic Syndrome (MS). Age and sex are well-known risk factors for MS, but the age-dependent rise in prevalence has a different trajectory for men and women. It is likely that hormonal factors explain the differential risk for men and women across different life stages [2]. Of particular interest is the role of testosterone. Increasing age and obesity are associated with reduced testosterone in men [3] which in turn is associated with T2DM [4].

Furthermore, the T4DM study has shown that testosterone therapy in middle aged and older men with central obesity and impaired glucose tolerance or newly diagnosed T2DM reduced the prevalence of T2DM at two years compared to placebo [5]. Part of this beneficial effect is likely explained by a reduction in fat mass and an increase in lean body mass, but other mechanisms may also be contributing.

It is of interest to know whether part of this effect can be explained by interaction with other endocrine systems, in particular the Renin-Angiotensin-Aldosterone System (RAAS). The RAAS is a key endocrine system involved in cardiovascular homeostasis. A well-known example of RAAS dysfunction is primary aldosteronism (PA), a condition characterised by (semi-) autonomous aldosterone secretion, which is the most common cause of secondary hypertension [6, 7], and associated with adverse cardiovascular outcomes [8, 9]. This is in part explained by blood pressure (BP) independent actions of aldosterone that are known to induce a pro-inflammatory and profibrotic phenotype.

Furthermore, an elevated BP often occurs as part of a cluster of multiple metabolic risk factors, including central obesity, dyslipidaemia, and dysglycaemia - the metabolic syndrome (MS) [10]. It has become clear that the mineralocorticoid receptor (MR) also plays a role in the pathophysiology of other components of the MS through activation in non-epithelial tissues, such as adipose, and that MR antagonism can mitigate some of these effects [11].

In light of the role of the MR in the pathophysiology of MS and further evidence suggesting that RAAS activity is increased in the

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obese [12], it is of interest to know whether testosterone has a modulatory effect on the RAAS.

There is indeed some evidence that androgens interact with the RAAS. For instance, men have higher plasma renin concentrations than women [13], which translates into lower aldosterone-to-renin ratio (ARR) levels in men [14].

In both a clinical study in 26 hypogonadal men with obesity [15], and an experimental study in gonadectomised rats [16], testosterone replacement led to a decrease in aldosterone concentration. This decrease in aldosterone was associated with reduced renal epithelial sodium channel (eNaC) expression, indicating decreased MR activity.

However, in both studies no renin levels were measured. Hofmann et al. [17] looked further into the role of the androgen receptor (AR) in BP regulation and MR physiology by treating gonadectomised rats with the AR antagonist flutamide with or without concomitant testosterone replacement. Interestingly, flutamide in the absence of testosterone increased aldosterone which could be attenuated by concomitant testosterone treatment.

In summary, androgens appear to influence the RAAS, but whether this is through direct modulation of components of the RAAS, or via indirect mechanisms, remains to be elucidated. Furthermore, whether androgen-mediated changes in the RAAS and MR activation also contribute to the metabolic improvements observed during testosterone replacement is unknown. Our study aims to further investigate these questions.

Aims and Hypothesis

This project aims to determine the effects of exogenous testosterone treatment on the RAAS, BP, glucose tolerance and lipid profile in middle-aged and older men with metabolic syndrome and to gain insight in the interactions between androgens and the RAAS to explain any observed metabolic and hormonal changes. The hypothesis is that testosterone treatment in obese men reduces RAAS activity and the beneficial metabolic changes observed with testosterone are partly mediated by alterations in the RAAS.

Methods

In this randomised, double-blind, placebo-controlled, cross-over study, 25 men, aged 40-75 years, with MS as defined by the presence of at least three out of five features [10] will be invited to participate.

Potential participants will be recruited from the wider community through GP practices within our network, as well as through advertisement in social media. Participants will be treated with 12 weeks of transdermal testosterone (Testosterone 1% gel) in a fixed dose of 50 mg or placebo gel in a double-blind cross-over design with a 4-week wash-out period.

At the start and end of each treatment period, the following parameters will be assessed: weight, waist circumference, office and 24-hr ambulatory BP, full blood count, serum sodium, potassium, creatinine, PSA, fasting glucose and lipid profile, insulin, steroid profile with LCMS/MS (including testosterone, cortisol, aldosterone, and relevant metabolites), luteinising hormone, follicle-stimulating hormone, sex hormone

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binding globulin, plasma renin, prorenin, plasma renin activity, and urinary samples for markers of renal MR activation including the sodium/potassium ratio [18] and urinary exosomes for sodium chloride cotransporters (NCC) and pNCC [19, 20].

Follow-up will be conducted at 6 weeks of each treatment period to assess for any side effects and BP measurement. Antihypertensive treatment will remain unchanged unless a change is clinically indicated. A schematic overview of the study protocol is shown in Figure 1.

Current status of the project

The study protocol is currently being finalised and preparation for application for review and approval by the local Human Research Ethics Committee as well as sponsorship by the Metro South Health Hospital and Health Service as part of the relevant governance process is in progress.

Timeline and future directions including use of the Seed Grant:

We aim to have full ethics approval and completion of the governance process by the end of April 2024. Recruitment of participants will start from early May 2024. The expected recruitment rate will be four enrolments per month with participant enrolment to complete by January 2025.

The ESA Seed Grant will be utilised to be able to cover both routine and advanced biochemical tests on obtained samples including steroid profiling, prorenin, and urinary exosome studies.

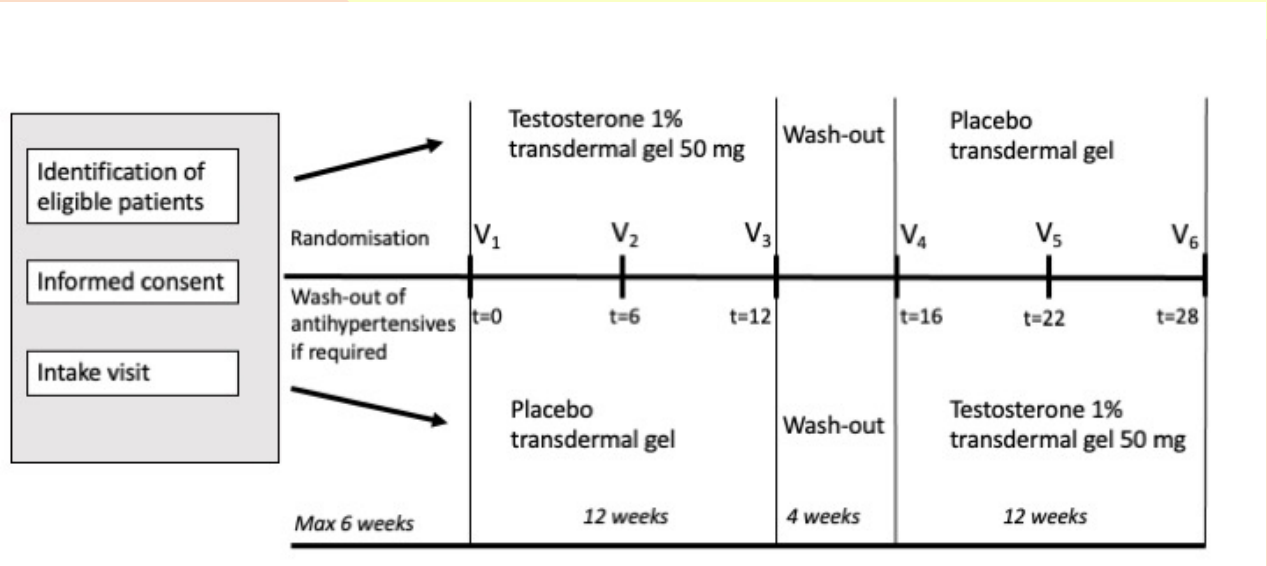

Figure 1. *Schematic overview of the study protocol*

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Seed Grant Report

The purpose of this award is to provide funding to support early stage research or small research projects by a mid-career ESA member. These grants may be used for research in any area of endocrinology. The research must be conducted in Australia.

Assessment of selective tissue-activatable glucocorticoid steroid prodrugs as improved antenatal and postnatal treatments for the complications of preterm birth

Recipient: Kelly Short

In Australia, 8.5% of babies are born preterm (>37 weeks) and 1.6% (>5,000 babies) are born very preterm (<32 weeks) (2016 AIHW Mothers & Babies). Complications from preterm birth account for 40% of neonatal deaths in Australia. Synthetic glucocorticoids (GCs) such as betamethasone or dexamethasone are routinely given to women in preterm labour to promote fetal lung maturation and reduce preterm infant morbidity and mortality.

Unfortunately, this life-saving treatment risks long-term adverse side-effects in many other organs, particularly the developing brain. There are currently no viable alternatives. This project assessed new tissue-selective activatable GR agonist prodrugs ciclesonide and beclomethasone dipropionate which are activated in vivo by tissue-specific carboxylesterase (CES) enzymes.

We have recently shown that these enzymes are highly active in the fetal/adult lung and in other peripheral organs but virtually absent in the fetal brain (1). We demonstrated that the steroid prodrug ciclesonide, a drug currently used to treat asthma in adults, was shown to promote neonatal lung maturation in rats but had no detrimental effect in the developing postnatal rat brain, an effect in contrast to the steroid dexamethasone. Here we aim to compare ciclesonide and beclomethasone dipropionate to betamethasone and dexamethasone in established mouse models of antenatal (Aim 1) and postnatal (Aim 2) of preterm birth.

Project Aims and Experimental Approach

Aim 1: Assess the prodrugs ciclesonide and beclomethasone dipropionate to betamethasone and dexamethasone for respiratory and neural responses in vivo using an antenatal mouse model of preterm birth

To mimic human antenatal steroid treatment, time-mated pregnant mice were injected subcutaneously with either ciclesonide, beclomethasone dipropionate or dexamethasone at E14.5 and E15.5 and pups analysed at E18.5 for respiratory maturation and brain development.

Aim 2: Assess the prodrugs ciclesonide & beclomethasone dipropionate to dexamethasone for respiratory & neural outcomes in a postnatal mouse model of bronchopulmonary dysplasia (BPD)

Seed Grant Report

To mimic postnatal steroid treatment, control and "BPD-model" mice will be exposed to four postnatal steroid treatment from day 7-14: vehicle (Group 1), Dexamethasone, 0.5mg/kg/day (Group 2), or the two of GR agonist prodrugs (Group3/4; 0.5mg/kg/day).

There will be 8 control and 8 BPD-model mice in each group. At day 14, all postnatal pups will be humanely killed, assessed for body weight and lungs from half of each group will be used for histological analysis and the remaining lungs from each group used for biochemical and morphometric analysis and levels of GR-responsive target genes. The brain will be assessed for weight, histological changes and cortical neural biomarkers.

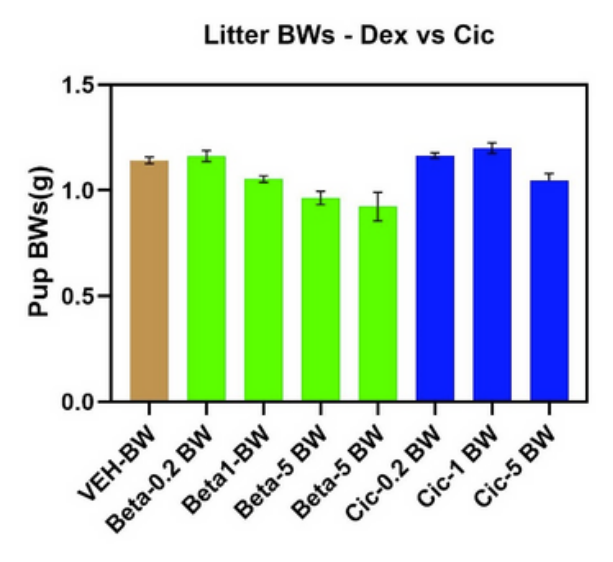

Figure 1. *Measurement of body weight at birth show that the prodrug ciclesonide does not have the side-effects of dexamethasone to reduce body weight. This will be further assessed by analysis of brain weight and histology, and effects on metabolic status related to glucose levels in the bloodstream.*

Project Progress

Aim 1: To date we have performed all mouse steroid-injection experiments for aim one and collected the lung and brain tissue of pups at E18.5 for analysis. We have shown that unlike dexamethasone ciclesonide does not reduce pup body weight (Fig. 1). Assessment of lung histology and developmental status is complete. Analysis of lung tissue sections for the percentage airway-tissue space, a measure of alveolarization and lung development, show that both dexamethasone and ciclesonide-treated pregnant mice have larger airway spaces, an indicator of advanced lung development.

This will be further quantified with other lung biomarkers and morphology measurements to compare lung architecture changes. These are expected changes that we hoped to observe.

Aim 2: Animal ethics for this project has also been approved (Monash University - Hudson Institute MMCA AEC Project No. MMCA/2023/08: A novel glucocorticoid for reducing lung diseases of preterm birth. Megan Wallace (PI), Tim Cole (CI). The protocol for Aim 2 is shown below in Fig. 2:

Seed Grant Report

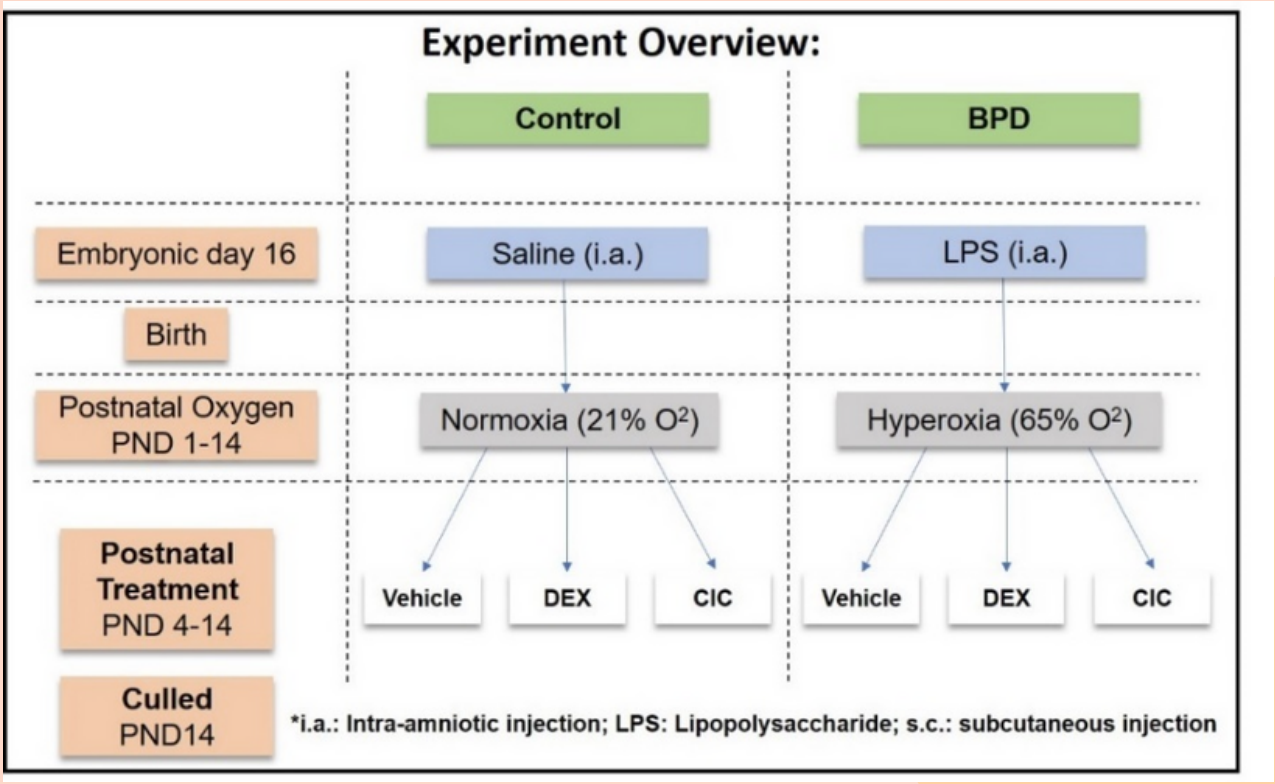

Figure 2. *We will use an inflammatory / hyperoxia mouse model of BPD that replicates the clinical features of BPD in human babies. At day 7, BPD mice will be treated postnatally with either dexamethasone or ciclesonide (together with a sham-injection control) three times, 24 hours apart (to day 10) and then analysed at day 14 for lung histology/biomarkers and also for any changes (compared to controls) in postnatal brain weight, morphology, histology and a range of neural biomarkers.*

Conclusions and future studies

Current experimental results have demonstrated that ciclesonide, as an activatable steroid prodrug, has a similar efficacy to dexamethasone to promote accelerated fetal lung maturation before birth in an experimental mouse model of preterm birth. Ciclesonide does not cause the fetal growth retardation effects caused by dexamethasone indicating a reduction in organ off-target effects. Further analysis will assess specific biomarkers of lung maturation, and assess effects on specific organs such as the brain, gut and other metabolic systemic responses. Assessment of ciclesonide as a potential treatment of BPD will be assessed using an inflammatory/hyperoxia mouse model of BPD and should provide critical data of the potential of novel steroid prodrugs to replace current steroids in clinical practice.

References

1. Jaumotte et al., 2021, Neurobiology of Disease 156:105422; doi: 10.1016/j.nbd.2021.105422

Seed Grant Report

The purpose of this award is to provide funding to support early stage research or small research projects by a mid-career ESA member. These grants may be used for research in any area of endocrinology. The research must be conducted in Australia.

Deletion of Foxe1 in the Adult Mouse: New Pathways to Autoimmune Thyroiditis

Recipient: Martyn Bullock

Summary

Despite compelling genetic evidence linking the thyroid developmental gene FOXE1 to autoimmune thyroiditis and differentiated thyroid cancer, the specific biological mechanisms have remained elusive.

To address this knowledge gap, we developed a tamoxifen-induced Foxe1 knockout (Foxe1-TAM) mouse model. This model revealed that the loss of Foxe1 leads to dedifferentiation and an increase in thyroidal mast cells (Lim et al., 2022).

These observations represent the first experimental evidence that perturbed Foxe1 activity induces immunological changes within the adult thyroid. We hypothesize that these changes are contributing to the development of adult thyroid disease.

This project aims to utilize multi-omics, cell culture models, and computational biology to more fully characterize the immune phenotype, addressing two specific experimental hypotheses:

1. Does Foxe1's role in maintaining the differentiation of adult thyroid tissue, offer protection against autoimmune disease.

2. Do mast cells, which have not previously been implicated, play a role in mediating destructive thyroiditis.

Progress

Since the grant award, our team has made considerable progress in our experimental aims: Histological and immunofluorescence has revealed that the infiltration of mast cells is accompanied by macrophages into the Foxe1-TAM thyroid gland two weeks post-tamoxifen treatment, with significant lymphocytic infiltration becoming apparent at 20 weeks.

These changes are accompanied by architectural remodelling in the Foxe1-TAM thyroids, including smaller and more condensed follicles and emerging interfollicular fibrosis. Most recently, to delve deeper into the interactions between thyrocytes and these immune cell populations, we have undertaken spatial transcriptomics utilized the NanoString GeoMx Digital Spatial Profiler at Griffith University, Queensland.

Seed Grant Report

Optimization of staining with CD3/CD68/nuclei morphology markers has been completed and the RNA sequencing data from these experiments are scheduled to be performed in January 2024.

Our bioinformatics analyses of public genomic data have uncovered that Foxe1 interacts with promoters/enhancers of several genes involved in iodine metabolism, such as Scl5a5 (Nis), Duoxa2, Duox2, Cdh16, as well as Hhex and Foxe1 itself.

These findings corroborate the thyroidal gene expression changes observed in FOXE1-TAM mice. Interestingly, we also identified genes encoding several cytokines, chemokines, and some of their receptors, including Ecrg4, which we previously found to be strikingly upregulated in response to Foxe1 deletion (Lim et al., 2022). Ecrg4 encodes a 17 kDa sentinel peptide tethered to the cell surface, playing a role in maintaining cell homeostasis and modulating pro-inflammatory responses to injury and infection.

Notably, during inflammation, proteolytic processing of Ecrg4 leads to its untethering, enabling it to recruit and activate immune cells through interaction with Toll-like receptor 4 (TLR4). Given that mast cell degranulation and chemokine release can also be TLR4-dependent during inflammation, we hypothesized that Ecrg4 initiates the activation of mast cells in the thyroid following Foxe1 loss.

To investigate this, we conducted experiments using the HMC-1 and LAD2 mast cell lines as model systems to examine the role of Ecrg4 in mast cell activation via TLR4. Our findings revealed that treatment with recombinant Ecrg4 significantly stimulates the expression of Tumour Necrosis Factor (TNF) in these cells.

Interestingly, however, the levels of tryptase, chymase, and histamine — key markers of mast cell degranulation — remained unaffected. This observation suggests a specific and nuanced role for Ecrg4 in modulating mast cell pro-inflammatory activity related to inflammatory signaling, without directly influencing the mast cell degranulation process.

These results will be presented at the upcoming Endocrine Society of Australia annual scientific meeting. Additionally, the data will support our upcoming Australian NHMRC ideas grant application.

Conclusions and Career Implications

Our research to date underscores the complex interplay between thyroid function and immune regulation, specifically highlighting the role of FOXE1 in this process. The insights gained not only advance our understanding of thyroid pathophysiology but also open new avenues for therapeutic interventions in thyroid autoimmunity as well as cancer. I am extremely grateful to the ESA Council for funding this project which enabled us to undertake the costly spatial transcriptomic assays. This grant has significantly helped to bolster my research trajectory and expertise in the field of thyroidology. Our team's work is steadily gaining recognition in this area, and we are confident that our work will lead to impactful contributions to the field in the near future.

Lim G, Widiapradja A, Levick SP, McKelvey KJ, Liao XH, Refetoff S, Bullock M, Clifton-Bligh RJ. Foxe1 Deletion in the Adult Mouse Is Associated With Increased Thyroidal Mast Cells and Hypothyroidism. Endocrinology. 2022 Oct 23;163(12):bqac158. doi: 10.1210/endocr/bqac158. PMID: 36156081; PMCID: PMC9618408.

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ESA MEDIA

Hormones Hotseat

This is an ESA ECC-led podcast where we interview clinicians and basic scientists on important career and professional development topics.

Episode 1 is with Dr Lachlan Angus on transitioning to private practice

Episode 2 is with A/Prof Sunita De Sousa on PhDs

Episode 3 is with Dr Emma Boehm on Endocrinology / Nuclear Medicine dual training.

The podcasts are available on the ESA website only to ESA members: https://www.endocrinesociety.org.au/hormone-hotseat-podcast.asp

ESA Webinars

This is a series of webinars dedicated to female endocrinology covering topics such as amenorrhoea, infertility, PCOS, menopause and more!

Amenorrhoea: investigation and management

Monday 27 March

Professor Susan Davis

Menstrual Migraine

Monday 1 May

Dr Alexis Selby

Menstral Dysphoria

Monday 3 July

Dr Rosie Worsley

Infertility for Endocrinologists

Tuesday 12 July

Dr Roger Hart

PCOS

Tuesday 15 August

Dr Anju Joham

POI

Monday 18 September

Dr Amanda Vincent

The webinars are available on the ESA website only to ESA members.
Log in on the ESA homepage: https://www.endocrinesociety.org.au

Hormones Australia

Latest articles:

Hormones Australia
ENDOCRINE SOCIETY OF AUSTRALIA

[An overview of current and future medications for obesity]

Hormones Australia is an initiative of the Endocrine Society of Australia (ESA). Its purpose is to increase awareness and provide information about hormones and how they affect the body, as well as information about common hormone-related conditions.

[What's hot in diabetes? Dr Shane Hamblin's presentation to the ESA/SRB ASM.]

[New guidelines for Polycystic Ovary Syndrome (PCOS)]

Patient Resources

The Endocrine Society of Australia have established an international collaboration with the US Endocrine Society to adapt patient information to the Australian setting and make them readily available.

Click here

These are available in both English and Chinese.

These resources are rigorously developed, evidence based and aimed to support patients to understand their endocrine condition with the support of their doctor.

Please note that only the information on the Australian link is adapted to national settings including medications and tests. Other resources on the US website may be helpful but may not be consistent with Australian practice.

This information is designed to be informative and educational. It is not intended to provide specific medical advice or replace advice from your doctor.

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SPECIAL INTEREST GROUPS

Special Interest Groups

ANZPA

ANZPA is a network of specialist consultants, registrars and fellows with an interest in pituitary medicine.

About ANZPA

ANZPA Education

ANZPA Annual Meeting

ANZPA Monthly Meeting

WOMENDO

Women in Endocrinology special interest group

Informal discussions on topics important to females in endocrinology. Females AND males welcome!

About WOMENDO

Email to join mailing list

EndoGen

EndoGen is a national network of endocrine genetic centres, bringing together endocrinologists, clinical geneticists, endocrine genetic clinics and genetic testing laboratories.

Serving as a clinical and research platform, the aim of EndoGen is to improve access to genetic technologies and knowledge for clinicians and patients across Australia.

About EndoGen

Special Interest Groups

ESA Sustainability Special Interest Group

This inaugural group will explore ways to implement sustainable practices in Endocrinology.

Climate change is impacting human health, and we aim to empower members to make environmentally favourable choices. The group's scope is broad and may encompass net zero initiatives in clinical practice, prescribing, minimising low value care, 'greening' conferences, as well as research and advocacy.

The ESA sustainability interest group will be structured into various subcommittees. Members are encouraged to bring general ideas to the group and smaller working parties will then be formed, to connect members with shared interests. These subcommittees will report back to the main group in meetings held on-line every two months. Additionally, there may be some follow-up questions and discussions by email.

All new members are welcomed!

Some of the first objectives will be to coin the group's terms of reference and create a position statement which will define the group's purpose.

About the ESA SSIG

Special Interest Groups

Rural and Regional Endocrinology Special Interest Group

The primary goal is to create a peer group for rural and regional endocrinologists to connect and support one another, discuss cases, and support trainees with an interest in working in rural areas. The central group activity would be a second-monthly video-meeting for peer-review of complex cases in a safe and supportive environment.

Goals

- An opportunity for Australian rural and regional endocrinologists to meet each other;
- platform for peer review and complex case discussion in a supportive environment;
- A source of information for trainees interested in practising endocrinology in a rural area.

Planned activities

- Peer Review meeting to discuss complex cases by video-meeting, 1-hour, second monthly.
- ESA Seminar Weekend - The Rural Breakfast Meeting.
- Facebook group; for posting recent articles, upcoming conferences, meeting reminders (no case discussions on this platform).
- A review of the outcomes of the group (entry and 1-year survey).

Proposed meeting dates 2024

- Wed 10th January
- Wed 13th March
- Wed 8th May
- Wed 10th July
- Wed 11th September
- Wed 13th November

About the RRESIG

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ESA JOURNALS

ESA Journals

ESA has partnered with the Journal **Clinical Endocrinology**.
This will be our Society's journal. ESA members will have electronic access to this journal and will be able to get articles published. The editorial board can be expanded to include more Australian members.

Clinical Endocrinology publishes papers and reviews which focus on the clinical aspects of endocrinology, including the clinical application of molecular endocrinology. It does not publish papers relating directly to diabetes care and clinical management. It features reviews, original papers, commentaries, cases of the month, book reviews and letters to the editor. Clinical Endocrinology is essential reading not only for those engaged in endocrinological research but also for those involved primarily in clinical practice.

To access the journal, use the member log-in on the homepage:
http://www.endocrinesociety.org.au/
Go to "Membership" then "Clinical Endocrinology Journal"

Journal of Endocrinology is the highest impact journal dedicated to basic endocrinology. Journal of Endocrinology publishes original research articles, reviews and science guidelines. Its focus is on endocrine physiology and metabolism, including hormone secretion; hormone action and biological effects. The journal publishes basic and translational studies at the organ, tissue and whole organism level.

ESA endorses the Journal of Endocrinology,
entitling the ESA membership to a 25% discount on colour figure charges.
Impact Factor: 4.706
http://joe.endocrinology-journals.org/

ESA Journals

Australian Endocrinology Research Review is an independent medical update. Each edition features 10 key medical articles from global endocrinology journals with commentary from Professor Cres Eastman and Professor Duncan Topliss on why it matters to Australian practice. It is free to receive for all Australian health professionals and is delivered by email as a PDF attachment.

Sign up here to receive the publication on a regular basis.
http://www.researchreview.com.au/au/Clinical-Area/Internal-Medicine/Diabetes-Obesity/Endochrinology.aspx

Endocrinology, Diabetes & Metabolism Case Reports is a unique, open-access resource that publishes and links together case reports, enabling practitioners to communicate findings, share knowledge and convey medical experiences efficiently and effectively; furthering both medical education and clinical practice. The search and browse functionality enables fluid navigation between case reports, facilitating discovery, connections and comparisons; making it the go-to resource across all the many disciplines intersecting with endocrinology, diabetes and metabolism. ESA is one of many leading international societies that endorse EDM Case Reports in collaboration with Bioscientifica, a publisher wholly owned by the Society for Endocrinology.

Members of ESA are eligible for a 25% discount on the publishing fee.
www.edmcasereports.com

Journal of Molecular Endocrinology is the only society-owned journal dedicated to molecular endocrinology. The journal focuses on molecular and cellular mechanisms in endocrinology, including gene regulation, cell biology, signalling, mutations, transgenics, hormone-dependant cancers, nuclear receptors, and omics. Basic and pathophysiological studies at the molecule and cell level are considered, as well as human sample studies where this is the experimental model of choice. Technique studies including CRISPR or gene editing are also encouraged.

ESA endorses the Journal of Molecular Endocrinology,
entitling the ESA membership to a 25% discount on colour figure charges.
Impact Factor: 3.577
http://jme.endocrinology-journals.org/

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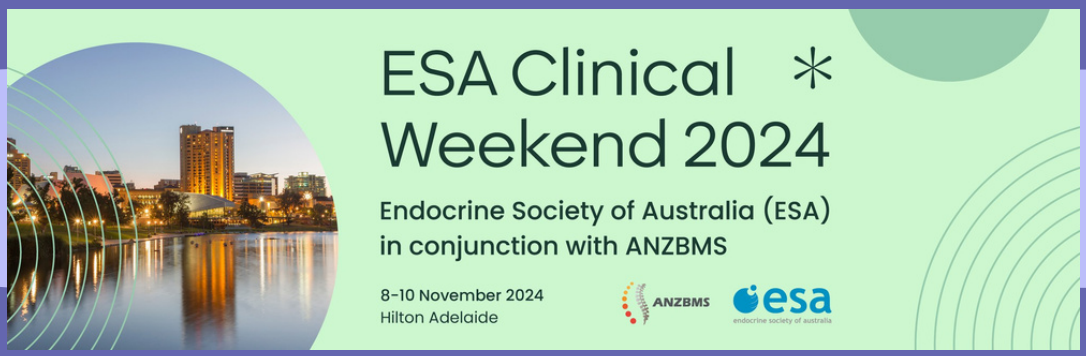
UPCOMING EVENTS

Upcoming Events



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We thank you for your continued support