2013 RESEARCH REPORT

HAEMATOLOGY

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HAEMATOLOGY

The Haematology Research Unit is primarily a clinical trials unit conducting both pharmaceutically-sponsored and investigator-initiated studies including collaborative research, in all fields of haematology.

The unit is aligned with the Australian Centre for Blood Diseases at Monash University and the Australian Leukaemia and Lymphoma Group (ALLG) and conducts studies in malignant and non-malignant diseases of the blood. The focus of the research conducted by the Haematology Clinical Trials Unit at Box Hill Hospital has changed over the last few years with less emphasis on novel anti-coagulants to a more broad range of interest in all haematological diseases encompassing the following disease states; myelofibrosis, multiple myeloma, myelodysplasia, idiopathic thrombocytopenia, venous thromboembolism and the leukaemias. Novel treatments for malignant haematological diseases such as the many leukaemias and multiple myeloma are being investigated in several clinical trials being conducted at Box Hill and Maroondah hospitals ensuring that Eastern Health patients have access to these new therapies.

During the 2012–13 the Box Hill Hospital unit started 12 new clinical trials including seven in the leukaemias, two in myelofibrosis, one in multiple myeloma and one in deep vein thrombosis. Three additional trials are in the final stages of approval for multiple myeloma, myelodysplastic syndrome and acute myeloid leukaemia. The unit has also been approached to conduct more new studies in multiple myeloma, myelodysplasia and idiopathic thrombocytopenia.

A number of applications to the Pharmaceutical Benefits Scheme for the use of novel anticoagulants in the prevention and treatment of venous thromboembolism have been approved in the past year. Helping to provide patients and doctors with more options for treatment marks a very satisfactory conclusion to the units involvement in the testing of these agents. Although presenting many new challenges, the unit is working to achieve similar success in the coming years with agents now under investigation for the treatment of haematological malignancies like multiple myeloma, myelofibrosis and the leukaemias. Since his retirement in 2012, Professor Salem's drive, humour and enthusiasm continue to be greatly missed but as befits a unit he established, the team continue to strive to continue his legacy of conducting high quality, patient-centred research.

Program Directors

Professor Hatem Salem (retired December 2012)
Professor Anthony Schwarer & Professor Paul Coughlin

Research team

Lesley Poulton	Unit Manager
Claire Gollogly	Study Nurse/Coordinator
Maria Di Staso	Study Nurse/Coordinator
Dr Jay Hocking	Haematology Registrar
Dr Alison Slocombe	Haematology Registrar
Dr Sue Cranmer	Ethics Specialist
Andrew Nichola	Clinical Research Associate
Archie Xu	Research Intern
Robyn Massaro	Administration Support
Patricia Callegieri-Medcalf	Administration Support
Vi Tran	RMIT Pharmaceutical Sciences placement student

Projects in progress

Projects in progress by the unit during the course of the past year have included:

Ambisome in AML – A randomised, open-label, phase II pilot study on the safety of a daily, intermittent, or weekly administration of 1, 3 or 10mg/kg of AmBisome® in antifungal primary prophylaxis of high-risk patients with acute myeloid leukaemia
Lead researcher: Schwarer A. The primary objective of this trial is to assess and compare the safety of three regimens of liposomal amphotericin B (LAB) (AmBisomeÒ) when used as primary antifungal prophylaxis during induction and consolidation treatment for acute myeloid leukaemia by determining the incidence of infusion-related reactions, laboratory abnormalities, renal toxicity and overall adverse events.

AMGEN bone marrow study – A prospective, phase IV, open-label, multicentre study evaluating changes in bone marrow morphology in adult subjects receiving romiplostim for the treatment of thrombocytopenia associated with Immune (Idiopathic) Thrombocytopenia Purpura (ITP)
Lead researchers: Salem H, Coughlin P.
The development of collagen fibrosis after long-term exposure to romiplostim at year 1, 2, and 3 compared to baseline for adult subjects with ITP will be estimated. Changes in cytokine levels from baseline, and any correlation of these changes with bone marrow, clinical and laboratory findings will be described.

ALL (Ino-Vate) – An open-label, randomised, phase III study of inotuzumab ozogamicin compared to a defined investigator's choice in adult patients with replased or refractory CD22-postive acute lymphoblastic leukaemia
Lead researchers: Schwarer A, Coughlin P.
To compare the haematological remission, defined as complete response in patients with relapsed/refractory ALL, randomised to receive inotuzumab ozogamicin versus patients randomised to receive active comparator. Safety and efficacy endpoints, as well as overall patient survival will be compared between the two arms of the study.

COMFORT (Jak-2)- A randomised, double-blind, placebo-controlled study of the JAK inhibitor INCB018424 tablets administered orally to subjects with Primary Myelofibrosis (PMF), Post-Polycythemia Vera- Myelofibrosis (PPV-MF) or Post-Essential Thrombocythemia-Myelofibrosis (PET-MF)
Lead researchers: Coughlin P, Salem H.
To evaluate the efficacy, safety and tolerability of INCB018424 given twice daily compared to placebo, in subjects with primary myelofibrosis (PMF), post-polycythemia myelofibrosis (PPV-MF) or post-essential thrombocythemia-myelofibrosis (PET-MF).

ENESTcmr – An open-label, randomised study of Nilotinib vs. Standard Imatinib (400/600 mg QD) comparing the kinetics of complete molecular response for CML-CP patients with evidence of persistent leukaemia by RQ-PCR
Lead researchers: Schwarer A, Coughlin P.
The primary objective was to compare the rate of confirmed best cumulative CMR within the first year of study therapy with nilotinib or imatinib.

ENEST extnd – Extending molecular responses with Nilotinib in newly diagnosed chronic myeloid leukaemia (CML) patients in chronic phase
Lead researchers: Schwarer A, Coughlin P.
The primary objective is to evaluate efficacy, using molecular response, of nilotinib 300 mg BID in the treatment of newly diagnosed CML-CP patients.

ENESTop – A phase II, single-arm, open-label study of nilotinib discontinuation after achieving and maintaining MR4.5
Lead researchers: Schwarer A, Coughlin P.
To evaluate the proportion of patients in treatment-free remission within 12 months following nilotinib cessation. Patients will be followed for treatment-free remission for up to four years following nilotinib cessation to estimate progression free survival, treatment-free survival and overall survival.

ENDEAVOR – A randomised, open-label, phase III study of Carfilzomib plus Dexamethasone vs. Bortezomib plus Dexamethasone in patients with relapsed multiple myeloma
Lead researchers: Schwarer A, Coughlin P.
The primary objectives of this study are to compare progression-free survival in patients with multiple myeloma relapsed after 1-3 prior therapies when treated with Carfilzomib/Dexamethasone or Bortezomib/Dexamethazone. Overall survival, neuropathy, safety and tolerability will also be assessed.

EPIC – A phase III randomised, open-label study of Ponatinib versus Imatinib in adult patients with newly diagnosed chronic myeloid Leukemia in chronic phase
Lead researchers Schwarer A, Coughlin P.
People with newly diagnosed chronic myeloid leukaemia (CML) are enrolled in this study comparing the effectiveness of the new treatment ponatinib with the standard treatment of imatinib. The study will also examine how the genes involved in CML affect the overall survival of patients.

GILEAD – A phase III, randomised, controlled study evaluating the efficacy and safety of GS-1101 (CAL-101) in combination with Ofatumumab for previously treated chronic lymphocytic leukaemia
Lead researchers: Schwarer A, Coughlin P.
The primary objective of this study is to evaluate the effect of the addition of GS-1101 (Idelalisib) to ofatumumab on progression-free survival (PFS) in patients with previously treated chronic lymphocytic leukaemia (CLL). The effects of the addition of Idelalisib to ofatumumab on the onset, magnitude and duration of tumour control and overall survival will be assessed.

INCYTE (Jak 1) – An open-label, multiple simon, two-stage study of INCB039110 administered orally to subjects with Primary Myelofibrosis (PMF), Post Polycythemia Vera Myelofibrosis (PPV-MF) or Post Essential Thrombocythemia Myelofibrosis (PET-MF)
Lead researchers: Coughlin P, Schwarer A.
The primary objectives are to evaluate the preliminary effectiveness of oral INCB039110 for the treatment of patients diagnosed with primary or secondary myelofibrosis, with respect to reduction of symptoms and a reduction of spleen size. The safety and tolerability of the study drug will also be assessed.

JAKARTA – A phase III, multicentre, randomised, double-blind, placebo-controlled, three-arm study of SAR302503 in patients with intermediate-2 or high-risk primary Myelofibrosis, Post-Polycythemia Vera Myelofibrosis, or Post-Essential Thrombocythemia Myelofibrosis with Splenomegaly
Lead researchers: Coughlin P, Schwarer A.
To evaluate the efficacy of daily oral doses of 400 mg or 500 mg of SAR302503 (investigational medicinal product, IMP) compared to placebo in the reduction of spleen volume as determined by magnetic resonance imaging (MRI) or computed tomography [CT] scan (in patients with contraindications for MRI).

LEOPARD – A phase II study of lenalidomide and prednisolone as POST-ASCT maintenance therapy for patients with multiple myeloma incorporating residual disease monitoring
Lead researchers: Schwarer A, Coughlin P.
To document changes in the depth of disease response in post-autologous stem cell transplant (ASCT) multiple myeloma patients who receive maintenance therapy of Revlimid® and alternate-day Prednisolone (RAP). Minimal residual disease will be quantified by various methods in patients who appear to be in complete response as currently measured by immunofixation.

PERSIST-1 – A randomised, controlled, phase III study of oral Pacritinib versus best available therapy in patients with primary Myelofibrosis Post-Polycythemia Vera Myelofibrosis, or Post-Essential Thrombocythemia Myelofibrosis
Lead researchers: Coughlin P, Schwarer A.
The principal study hypothesis is that treatment with pacritinib results in a greater proportion of patients achieving a greater than 35% reduction in spleen volume from baseline to week 24, than patients treated with Best Available Treatment (BAT).

RESONATE – A randomised, multicentre, open-label, phase III study of the Bruton's Tyrosine Kinase Inhibitor PCI-32765 versus Chlorambucil in patients 65 years or older with treatment naive Chronic Lymphocytic Leukaemia (CLL) or Small Lymphocytic Lymphoma (SLL)
Lead researchers: Coughlin P, Schwarer A.
The primary objective is to evaluate the efficacy of PCI-32765 compared with chlorambucil based on the Independent Review Committee (IRC) assessment of progression-free survival in patients 65 years of age or older with treatment naive CLL or SLL. The safety and tolerability of PCI-32765 will also be compared with chlorambucil.

RESONATExtnd – An open-label extension study in patients 65 years or older with Chronic Lymphocytic Leukemia (CLL) or Small Lymphocytic Lymphoma (SLL) who participated in study PCYC-1115-CA (PCI-32765 versus Chlorambucil)
Lead researchers: Coughlin P, Schwarer A.
This is a companion extension study for patients participating in RESONATE. The aim of this study is to provide long-term follow-up and/or second-line therapy for patients who experience confirmed disease progression at the time of closure of the RESONATE study.

TWISTER DVT – Two weeks of low molecular weight Heparin for Distal Vein Thrombosis
Lead researchers: Coughlin P, Schwarer A.
In an effort to better inform the current debate around the best treatment of isolated distal Deep Vein Thrombosis, this project will determine if a limited two-week duration of anticoagulation for the treatment of isolated distal vein thrombosis leads to complete resolution of symptoms, and a low rate of clinically significant recurrent venous thromboembolism (VTE) during three months of follow-up.

VANTAGE 088 (Extension Phase) – An international, multicentre, randomised, double-blind study of Vorinostat (MK 0683) or placebo in combination with Bortezomib in patients with multiple Myeloma
Lead researchers: Coughlin P, Schwarer A.
This project continues the long-term follow up of patients who responded to treatment in the Vantage 088 study. Ongoing treatment, response and survival of these patients is monitored.

ZOSTER – Observer-blind study to evaluate efficacy, safety and immunogenicity of GSK Biologicals' Herpes Zoster vaccine GSK1437173A
Lead researchers: Schwarer A, Coughlin P.
Herpes zoster infection is common after a bone marrow transplant or blood stem cell transplant. The purpose of this research study is to test how well an investigational vaccine called GSK1437173A against herpes zoster virus works to protect against shingles in people after they have received an autologous stem cell transplant.

Projects completed

Projects undertaken by the department and successfully completed during the course of the past year have included:

BOMeR – An Australian multicentre, phase II study of bortezomib and dexamethasone as treatment and maintenance for multiple myeloma who have relapsed after autologous bone marrow transplant or following re-induction with thalidomide and/or dexamethasone
Lead researchers: Schwarer A, Coughlin P.
To determine the efficacy of the combination of bortezomib (Velcade) and dexamethasone for the treatment of relapsed multiple myeloma. Eight patients were recruited at Box Hill Hospital contributing to the study outcome that combining bortezomib and dexamethasone from Cycle 1 in relapsed multiple myeloma significantly improves response to treatment without higher toxicity and should now be regarded as a standard of care.

CLAVELA – A randomised, phase III study of Elacytarabine vs Investigator's Choice in patients with late stage acute myeloid leukaemia
Lead researchers: Schwarer A, Coughlin P.
The objective was to compare the efficacy, measured as overall survival (OS), of elacytarabine and investigator's choice in patients with late stage AML. The final results of this study have recently been published, demonstrating that elacytarabine exhibited no significant benefit to patients when compared to the investigators choice of treatment.

HOKUSAI – A phase III, randomised, double-blind, double-dummy, parallel-group, multicentre, multi-national study for the evaluation of efficacy and safety of (LMW) heparin/edoxaban versus (LMW) heparin/warfarin in subjects with symptomatic deep vein thrombosis and/or pulmonary embolism
Lead researchers: **Coughlin P, Salem H.**
This study evaluated whether initial (Low Molecular Weight) heparin followed by edoxaban only is non-inferior to initial (LMW) heparin overlapping with warfarin, followed by warfarin only in the treatment of subjects with acute symptomatic VTE for the prevention of symptomatic recurrent VTE during the 12-month study period. A total of 46 patients enrolled in the study at Box Hill Hospital. The study drug was well tolerated by all study participants. We await final analysis of the study data.

Siltuximab (CNTO 328) – A phase II, randomised, double-blind, placebo-controlled, multicentre study comparing siltuximab plus best supportive care to placebo plus best supportive care in anaemic subjects with international prognostic scoring system low- or Intermediate-1-Risk Myelodysplastic Syndrome
Lead researchers: **Schwarer A, Coughlin P.**
The primary objective was to assess the clinical efficacy of siltuximab, demonstrated by a reduction in RBC transfusions to treat the anaemia of MDS. The final outcome of this study indicated that the treatment was ineffective and the study was close prematurely due to futility.

VANTAGE 088 (Extension Phase) – An international, multicentre, randomised, double-blind study of Vorinostat (MK 0683) or placebo in combination with Bortezomib in patients with multiple myeloma.
Lead researchers: **Coughlin P, Schwarer A.**
The purpose of this study was to determine whether a new drug Vorinostat is safe and effective in patients with multiple myeloma when it is added to treatment with an existing treatment bortezomib. Vorinostat is already approved in the USA for treatment of T-cell Non-Hodgkin lymphoma but in this indication conferred no greater treatment advantage than treatment with bortezomib alone. Participants who responded to therapy (bortezomib or vorinostat combined with bortezomib) were provided with the opportunity to continue receiving that treatment and are now monitored in an extension study.

Publications for period 1 July 2012 – 30 June 2013

JOURNALS

Published

Brighton TA, Eikelboom JW, Mann K, Mister R, Gallus A, Ockelford P, Gibbs H, Hague W, Xavier D, Diaz R, Kirby A, Simes J, **ASPIRE Investigators**. Low-dose aspirin for preventing recurrent venous thromboembolism. *N Engl J Med*. 2012; 367(21):1979-87.

Low M, Lee D, Coutsouvelis J, Patil S, Opat S, Walker P, **Schwarer A**, Salem H, Avery S, Spencer A, Wei A. High-dose cytarabine (24 g/m^2) in combination with idarubicin (HiDAC-3) results in high first-cycle response with limited gastrointestinal toxicity in adult acute myeloid leukaemia. *Int Med J*. 2012: 294-297.

Hosseini E, **Schwarer AP**, Ghasemzadeh M. The impact of HLA-E polymorphisms in graft-versus-host disease following HLA-E matched allogeneic hematopoietic stem cell transplantation. *Iran J Allergy Asthma Immunol*. 2012; 11:15-21.

Ong CW, Malipatil V, Lavercombe M, Teo KG, **Coughlin PB**, Leach D, Spanger MC, **Thien F**. Implementation of a clinical prediction tool for pulmonary embolism diagnosis in a tertiary teaching hospital reduces the number of computed tomography pulmonary angiograms performed. *Intern Med J*. 2013; 43(2):169-74.

Ross DM, Branford S, Seymour JF, **Schwarer AP**, Arthur C, Yeung DT, Dang P, Goyne JM, Slader C, Filshie RJ, Mills AK, Melo JV, White DL, Grigg AP, Hughes TP. Safety and efficacy of imatinib cessation for CML patients with stable undetectable minimal residual disease: results from the TWISTER study. *Blood*. 2013; 122(4):515-22.

Morrissey CO, Chen SC, Sorrell TC, Milliken S, Bardy PG, Bradstock KF, Szer J, Halliday CL, Gilroy NM, Moore J, **Schwarer AP**, Guy S, Bajel A, Tramontana AR, Spelman T, Slavin MA; Australasian Leukaemia Lymphoma Group and the Australia and New Zealand Mycology Interest Group. Galactomannan and PCR versus culture and histology for directing use of antifungal treatment for invasive aspergillosis in high-risk haematology patients: a randomised controlled trial. *Lancet Infect Dis*. 2013; 13(6):519-28.

Hosseini E, **Schwarer AP**, Jalali A, Ghasemzadeh M. The impact of HLA-E polymorphisms on relapse following allogeneic hematopoietic stem cell transplantation. *Leuk Res*. 2013; 37(5):516-9.

Heatley SL, Pietra G, Lin J, Widjaja JM, Harpur CM, Lester S, Rossjohn J, Szer J, **Schwarer A**, Bradstock K, Bardy PG, Mingari MC, Moretta L, Sullivan LC, Brooks AG. Polymorphism in human cytomegalovirus UL40 impacts on recognition of human leukocyte antigen-E (HLA-E) by natural killer cells. *J Biol Chem*. 2013; 288: 8679-8690.

Fong CY, Grigoriadis G, Hocking J, Coutsouvelis J, Muirhead J, Campbell P, Paul E, Walker P, Avery S, Patil S, Spencer A, **Schwarer A**, Wei A. Fludarabine, cytarabine, granulocyte-colony stimulating factor and amsacrine: an effective salvage therapy option for acute myeloid leukaemia at first relapse. *Leuk Lymphoma*. 2013; 54: 336-341.

Low M, Lee D, Coutsouvelis J, Patil S, Opat S, Walker P, **Schwarer A**, Salem H, Avery S, Spencer A, Wei A. High-dose cytarabine (24g/m(2)) in combination with idarubicin (HiDAC-3) results in high first cycle response with limited gastrointestinal toxicity in adult acute myeloid leukaemia. *Intern Med J*. 2013 Mar;43(3):294-7.

Cohen AT, Spiro TE, Buller HR, Haskell L, Hu D, Hull R, Mebazaa A, Merli G, Schellong S, Spyropoulos AC, Tapsom V, for the **MAGELLAN Investigators**. Rivaroxaban for thromboprophylaxis in Acutely Ill Medical Patients. *N Engl J Med*. 2013; 368(6):513-523.

Agnelli G, Buller HR, Cohen A, Curto M, Gallus AS, Johnson M, Porcari A, Raskob GE, Weitz JI; **AMPLIFY-EXT Investigators**. Apixaban for extended treatment of venous thromboembolism. *N Engl J Med*. 2013;368(8):699-708.

Experts in Chronic Myeloid Leukaemia. The price of drugs for Chronic Myeloid Leukemia (CML) is a reflection of the unsustainable prices of cancer drugs: from the perspective of a large group of CML experts. *Blood*. 2013; 30;121(22):4439-42.

TRIAL ACKNOWLEDGEMENT;

Iland H, Bradstock K, Seymour J et al. Results of the APML3 trial incorporating all-trans-retinoic acid and idarubicin in both induction and consolidation as initial therapy for patients with acute promyelocytic leukaemia. *Haematologica*. 2012; 97:227-234.

Conference including proceedings, abstracts, papers, poster

INTERNATIONAL

Cervantes F, Hughes T, Etienne G, Guerci-Bresler A, De Souza C, Moiraghi B, **Schwarer A**, Spector N, Lipton J, Purkayastha D, Collins L, Szczudlo T, Leber B. Continued deeper molecular response with nilotinib in patients with chronic myeloid leukaemia in chronic phase (CML-CP) with detectable disease on long-term imatinib: ENESTcmr 24-month results. 18th Congress of EHA. Stockholm, June 2013: Abstract P133.

Spector N, Leber B, Lipton JH, De Souza C, Moiraghi B, Steegmann JL, **Schwarer AP**, Cervantes F, Hughes TP, Purkayastha D, Collins LR, Szezudlo TK, Rea D. Switching patients (pts) with chronic myeloid leukaemia in chronic phase (CML-CP) with residual disease on long-term imatinib (IM) to nilotinib (NIL): ENESTcmr 24-mo follow-up. *J Clin Oncol* .2013,31 (suppl; abstr7053).

Kalff A, Kennedy N, Walker P, Black M, Gorniak M, Khong T, Estifo L, **Schwarer A**, Roberts A, Campbell P, Filshie R, Spencer A. Interim analysis of the LEOPARD study: A phase II study of lenalidomide and prednisolone (RAP) as post-ASCT maintenance therapy for patients with multiple myeloma (MM) incorporating minimal residual disease (MRD) monitoring. XIV International Myeloma workshop Kyoto, April 2013. Abstract book.

Yeung DT, Osborn MP, White DL, Branford S, Kornhauser M, Slader C, Issa S, Hiwase DK, Hertzberg MK, **Schwarer AP**, Filshie R, Arthur CK, Kwan YL, Forsyth CJ, Ross D, Mills AK, Grigg A, Hughes TP. Early switch to nilotinib does not overcome the adverse outcome for CML patients failing to achieve early molecular response on imatinib, despite excellent overall outcomes in the TIDEL II Trial. 54th ASH Annual Meeting. Atlanta, December 2012. Abstract 3771.

Hughes TP, Lipton JH, Spector N, Leber B, Pasquini R, Clementino N, **Schwarer AP**, Etienne G, Gurerci-Bresler A, Branford S, Purkayastha D, Collins LT, Szczudio T, Cervantes F. Switching to nilotinib is associated with continued deeper molecular responses in CML-CP patients with minimal residual disease after ≥ 2 years on imatinib: Enestcmr 2-year follow-up results. 54th ASH Annual Meeting. Atlanta, December 2012. Abstract 694.

Lipton JH, Hughes TP, Leber B, De Souza C, Dorlhiac-Llacer PE, Steegmann JL, Guerci-Bresler A, **Schwarer AP**, Cervantes F, Reynolds J, Collins LTR, Szczudlo TK, Spector N. Switch to nilotinib versus continued imatinib in patients (pts) with chronic myeloid leukaemia in chronic phase (CML-CP) with detectable BCR-ABL after two or more years on imatinib: ENESTcmr 12-month (mo) follow-up. *J Clin Oncol*. 2012; 30 (suppl; abstr 6505).

Cervantes C, Hughes T, Etienne G, De SouzaCA, Dorlhiac Llacer PE, **Schwarer A**, Leber B, Lipton J, Spector N, Reynolds J, Collins L, Szczudlo T, Rea D. Nilotinib induces deeper molecular responses versus continued imatinib in patients with PH+ chronic myeloid leukaemia (CML) with detectable disease after = two years on imatinib: ENEST CMR 12-months results. 17th Congress of EHA. Amsterdam, June 2012: Abstract O0586.

Ross M, Branford S, Seymour J, Arthur C, **Schwarer A**, Dang P, Goyne J, Bartley P, Fiekl C, Slader C, Rilshie R, Mills A, Melo J, White D, Grigg A, Hughes T. Frequent and sustained drug-free remission in the Australasian CML8 trial of imatinib withdrawal. 17th Congress of EHA. Amsterdam, June 2012: Abstract P0189.

Hosseini E, **Schwarer AP**, Ghasemzadeh M. Different genotypes of HLA-E in heatopoietic stem cell transplantation. 11th International Congress of Immunology & Allergy of Iran. Tehran, April 2012.

LOCAL

Tan P, Walker P, Catalano J, **Schwarer A**, Avery S, Patil S, Opat S, Spencer A, Wei A. Azacitidine in combination with the oral mTOR inhibitor everolimus (RAD001) in relapsed/refractory FLT3-ITD AML. Annual Meeting of HAA. Melbourne October 2012. Abstract Book I:52 (O004).

Avery S, Walker T, Patil S, Wei A, **Schwarer A**, Ling Y, Muirhead, Spencer A. Incidence of secondary malignancy in recipients of allogeneic stem cell transplantation – 20-year experience in a single institution. Annual Meeting of HAA. Melbourne October, 2012. Abstract Book I:203 (O120).

Walker, P, Kipp D, Avery S, Patil S, Wei A, Curtis D, **Schwarer A**, Muirhead, Spencer A. Non-myeloablative (NMA) allogeneic stem cell transplantation (alloSCT) for multiple myeloma and older patients with AML is safe and feasible. Annual Meeting of HAA. Melbourne 2012. Abstract Book I:64 (O016).

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Readers note: Where projects are collaborative with our respective research partners, Eastern Health staff names are in bold.

Clinical program reports available include:

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