

Research

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The following speech was written and presented by Professor David Ma, Director, Blood Stem Cell and Cancer Research Unit, Department of Haematology & Bone Marrow Transplantation, St Vincent's Hospital (SVH), Sydney, at the 35th anniversary of bone marrow transplants celebration at SVH on the 5th November, 2010.

In the early years, establishing new techniques such as stem cell culture in the transplant laboratory at St Vincent's Hospital, Sydney (SVH), and the application of a cell separator to treat diseases by Professor James Isbister & Associate Professor Anthony Dodds and myself, were the key elements leading to setting up a freezing method for bone marrow stem cells. This was vital to the success of autologous stem cell transplant at SVH, one of the first in Australia.

The next important milestone that made a difference to patient outcomes was the study of Graft versus Host Disease (GVHD) by Professor Kerry Atkinson, in particular the pivotal clinical trial establishing cyclosporine as a major drug to prevent & treat this transplant complication.

Establishing a patient database in the early 1990's, which eventually became the Australasian Bone Marrow Recipient Registry (ABMTRR), is another research milestone at SVH. The information generated from this database has allowed us to improve the way we undertake transplants. Importantly, it shows that over the years, transplant complications have been reduced significantly and we are now able to do more difficult transplants, and in a much older age group which we would not have dreamt of treating in the past.

Highlighting research in the last ten years or so since my appointment at SVH, we have expanded the application of Autologous Stem Cell Transplantation (ASCT) to treat autoimmune diseases. This project was initiated by Professor James Biggs & Professor Peter Brookes. We conducted the world's first clinical trial of ASCT in severe rheumatoid arthritis. ASCT is now extended to treating severe systemic sclerosis with great success by Dr John Moore who joined me at SVH a decade ago.

We have recently completed studies using bone marrow derived stem cells to treat ischaemic heart disease as well as stem cell gene therapy in



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HIV patients (again a world first). We have also embarked on preclinical studies of Stem Cell Treatment for spinal cord injury, Parkinsons Disease and intervertebral disc degeneration. One important research project in our unit is led by Dr Joanne Joseph on the role of platelets in bleeding and clot formation in patients suffering from blood diseases and cancers. Another led by Dr John Moore studies immune regeneration post-transplant.

Bone marrow transplantation is treating the end results of a disease and not the underlying defects inside cells that cause the disease. Combining our knowledge in stem cell biology and molecular biology expertise, we are currently seeking out the molecular defects critical to the survival of cancer like leukaemia, myeloma and lymphoma, with the eventual aim of correcting the defects using specially designed drugs.

Nurturing the next generation of researchers is also our goal. In the last decade, we have had ten PhD & three medical honours/ILP students graduate from our unit. Currently we have three PhD & one MSc students.

We could not and cannot do the work mentioned without the fantastic financial support of the Arrow Bone Marrow Transplant Foundation and

the Hawkesbury Canoe Classic who have supported our research over many years.

Research takes teamwork and I, on behalf of our research team, would like to acknowledge the contribution and support of Dr Sam Milliken, Dr Keith Fay, Assoc. Prof. Tony Dodds and Dr Allan Concannon who is now enjoying his retirement. I would also like to thank the dedicated nurses, allied health, SydPath and office staff for their support. It is great to work in a place where senior management and the Sisters of Charity not just recognise, but actively support research as an integral part of a great hospital. They have provided a state of the art research building which we moved into two years ago.

Finally, I would like to thank my current team of dedicated researchers: Helen Tao, Catalina Palmer, Toha Loi, Melissa Khoo, Steve Calin, Adam Bryant, David Agapiou, Mark Lutherborrow & David Connor.

In summary, the last 35 years of research at our transplant centre at SVH has greatly improved the lives of patients undergoing bone marrow transplant. Many of those are here today as testament of this success. You have provided us the beacon to continue our goal of curing blood cancers and other diseases. Thank you all for coming here today to celebrate this occasion.



