



Ministry Of Health

National Institute of Hematology and Blood Transfusion

OVERVIEW OF CURRENT STATUS OF STEM CELL TRANSPLANTATION IN VIETNAM

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I. Achievements



1. Research on application of stem cell transplantation in hematology

In Vietnam hematologists are pioneers in implementation of stem cell transplantation (bone marrow transplantation) for treatment of blood diseases.

- Since September 1995, 102 transplantation cases have performed in Ho Chi Minh city Hospital of Blood Transfusion and Hematology.
- Subsequently transplantation procedure has been performed in Hue Central Hospital (Middle Vietnam Center of Hematology and Blood Transfusion), Central Military Hospital No. 108, Central Pediatric Hospital and Hospital 19-8 (Ministry of Security).



1. Nghiên cứu ứng dụng tế bào gốc trong lĩnh vực Huyết học:

- Since 2006, 37 transplantations have been performed in National Institute of Hematology and Blood Transfusion (NIHBT) (28 autologous transplantation cases and 9 allogeneic transplantation cases).



1. Nghiên cứu ứng dụng tế bào gốc trong lĩnh vực Huyết học:

- There are 2 core blood banks.
 - + One belongs to HCMC Hospital of Blood Transfusion and Hematology: >3000 CBU
 - + Another core blood bank has been set up by Mekophar pharmaceutical company (Mekostem).
- Some other stem cells centers will be set up in near future.





2. Research on application of stem cell in other branches of medicine

There are several other research on stem cell application in Vietnam, including:

- + Research on fibroblast and keratocyte culture in National Burn Institute; research on spermatoid, mesenchymal and skin epithelial stem cells in Embryonic Technological Center (Military Medical Institute No. 103);
- + Implementation of stem cell transplantation for treatment of joints and bones disorders in Cho Ray Hospital (HCMC), Viet-Duc Hospital (Hanoi);
- + Stem cell transplantation have been implemented for treatment of cornea disorders.



2. Research on application of stem cell in other branches of medicine

+ Vietnam National Institute of Cardiology has performed research on autologous bone marrow stem cell transplantation for supportive treatment of cardiac failure post infarction.

+ FBM company in collaboration with National Dermatology Institute has performed research on application of stem cell into cosmetics technology.

- Also, there are several researches on stem cell and cloning in animals being carried out in Vietnam, such as cloning of Sao La and cow cloning.



3. National congresses and workshops on stem cell application

Several congresses and workshops on stem cell applications have been conducted.





II. Advantages and difficulties in HSCT activity in Vietnam



1. Advantages

- The Government, Ministry of Health, Ministry of Science and Technology give strong support and guidance on this issue;
- Legal framework for HSCT has been developed, especially issue of reimbursement by Vietnam Health Insurance;
- Many health professionals have been trained and mastered on HSCT technical skills;
- Specialized transplantation centers, hospitals and laboratories have been set up and well equipped for HSCT and stem cell research;
- Certain experience of stem cell research and application has been gained, especially in hematology.





2. Difficulties

- Lack of an unified national strategy for stem cell research and application and international cooperation;
- Shortage of stem cell donors source for allogeneic transplantation;
- Certain systematic issues are still not resolved (especially health insurance issue and reimbursement for stem cell donors etc.);
- Specialists are not trained properly (due to financial shortage, lack of courage, lack of strategy);



2. Difficulties

- Shortage of financial resource for stem cell research;
- Shortage of equipment and facility;
- Inexperience in organization and cooperation issues both nationally and internationally regarding stem cell research and application;
- Shortage of medication needed for transplantation conditioning such as chemotherapy agents (busulfan for injection etc.), antifungal and antiviral agents in case there is a resistance to currently available drugs, targeting therapy agents (Ifliximab, Daclizumab etc.), drugs for treatment of GVHD with corticosteroid resistance.



III. Suggestion of solutions



1. Human resource

- To recruit capable staff with courage to work in stem cell field;
- To train specialists extensively, especially young staff. Staff training should be emphasized on basic issues as well as advanced knowledge. Key staff should be sent overseas to be trained as technical specialists in order to be able to implement new techniques when coming back. Major centers in developed countries should be preferred training destinations for the staff;
- To make sure that technical staff has an appropriate working environment for fulfilling their duties and optimizing their knowledge and skills;
- To develop an appropriate salary mechanism to encourage medical and technical staff .





2. Appropriate and sustainable financial mechanism

Stem cell research is an expensive task. Hence, the Government must give full commitment and support.

- We need to develop a National stem cell program lengths for at least 5-10 years and secure adequate invest in order to have sufficient financial resource and human resource for main activities including development of stem cell donors source, HLA testing, development of information technology system, expanding and cooperating with international stem cell centers, staff training etc.

- Also, we need to develop an appropriate investment environment for business sector investing their money to stem cell research field.



3. Legal framework

To develop and perfect legal framework for stem cell research and application activities, such as:

- Regulation of stem cell donation;
- Regulation of technical processes and procedures in stem cell research and application to treat diseases;
- Regulation of scientific cooperation, application, procurement of stem cells products and technology with international partners;
- Cost issue of stem cell products and health insurance issue, especially for stem cell donors;
- Ethics issue related to biomedical research, scope of stem cell research and application.



4. Development of stem cell research and application facilities nationwide

- To set up and operate stem cell centers with scope of activities as following:
 - + Fully operating centers, which are able to perform all activities including stem cell collection (peripheral blood, bone marrow, cord blood etc.), research and application of stem cell to treat hematopoietic diseases;
 - + Research centers, which only perform basic research on stem cells;
 - + Collection centers, which only perform stem cell collection and storage, and distribute to other application centers;



4. Development of stem cell research and application facilities nationwide

- + Stem cell transplantation centers/departments within hospitals/institutes to promote and expand stem cell application activity to treat different disorders in several medical branches (such as hematology, surgery, cardiology, dermatology, burn treatment, ophthalmology, endocrinology etc.);
- Mean while to improve and centralize testing centers in order to have modern laboratories of immunology, genetics, molecular biology.





5. Information technology issue

To invest and develop information technology system for all stem cell related activities from stem cell donors recruitment to stem cell recipients management.



6. Intensification of international cooperation with stem cell centers worldwide

- To participate international stem cell organizations; Intensification of international cooperation is important in order to improve and expand national stem cell research and application.
- To organize “Vietnam stem cell centers network” and/or “Vietnam association for stem cell research and application” and to join regional and international stem cell research and application networks such as Stem Cell Network Asia Pacific (SNAP), International Society for Stem Cell Research. By doing so we will have opportunity to collaborate and acquire advanced knowledge and skills.



IV. Priorities for international cooperation in stem cell research

These priorities include:

- To train specialists on stem cell research, system organization, management of stem cell donors, international cooperation etc.;
- To participate associations of stem cell research and application worldwide, to be a member of regional and international stem cell networks;

- To exchange expertise and experience for cooperation and promotion HSCT activity;
- To collaborate with international stem cell centers network in order to have sufficient stem cell source to expand allogeneic HSCT program for treatment of hematopoietic malignancies.





THANK YOU