Apheresis Research Needs in Asia

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• Worldwide implemented nowadays.
• Most of Asian Countries also involved.
• The usage of this procedure varies between countries.
### Spectrum of Apheresis

**Therapeutic Apheresis**
- TPE
- Leukocytapheresis
- Thrombocytapheresis
- Erythrocytapheresis
- RBC exchange
- LDL apheresis
- Adsorptive cytapheresis
- Lymphocytapheresis
- ECP
- Rheopheresis

**Component Donation**
- Platelet
- Red cell
- Plasma

**Specific Procedure**
- PBSC Collection
WHAT TYPE APHERESIS RESEARCH NEED IN ASIA?

- Basic research
- Clinical research
- Translational research
WHAT APHERESIS RESEARCH NEED IN ASIA DEPEND ON?

- Its position in the local healthcare
- Blood donation use.
- Trends of diseases.
- Special medical treatments.
Apheresis is still a new/young science in Asian countries.

Should be introduced intensely to medical group (doctor, nurse, student, policy maker).

Research in these fields are needed:
- Education for physicians, nurses, medical students.
- Management of apheresis service for hospital and blood center.
Blood donation use

- Apheresis is a new procedure for donors.
- Most donations were plateletapheresis in Indonesia and surrounding Asian countries.
- Donation of plasma, redcell, granulocyte, and multicomponents are rare.
Blood donation use

- Research in these fields are needed:
  - Education for apheresis donor.
  - Short and longterm side effects to the apheresis donor.
Dengue infection is familiar in Asian area, so the platelet apheresis become important.

TA may be carried out for broad spectrum of disease which comprise endocrinology, hematology, nephrology, neurology, oncology, and rheumatology.
TRENDS OF DISEASES

Research in these fields are needed:
- Comparation between single and random donor platelet.
- HLA/HPA
Research in these fields are needed:

- Platelet bio-properties from apheresis product and its influence in patients
- TA modalities
- Inline plasma processing
Some countries in Asia have already performed special procedures, but some others have not.

Japan: Treatment of Refractory Chron’s Disease by Intensive Granulocyte and Monocyte Adsorption Apheresis.

South Korea: Safety and efficacy of G-CSF mobilization and collection of autologous peripheral blood stem cells in children with cerebral palsy.

Moon et al. Transfusion and Apheresis Science. 2013
China: Treatment of patients with polycythemia using ECP reduces RBC count, hemoglobin, and hematocrit. The advantages associated with ECP over conventional therapy should be considered when choosing a treatment plan for patients with polycythemia.

Liu et al. Transfusion and Apheresis Science. 2013
Thailand: Stochastic cellular automata model and Monte Carlo simulations of CD4+ T cell dynamics with a proposed alternative leukapheresis treatment for HIV/ AIDS.

SPECIAL MEDICAL TREATMENTS

- **Turkey**: Complications of therapeutic apheresis in children.

Kara *et al.* Transfusion and Apheresis Science. 2013
- **Taiwan**: successful large-volume leukapheresis for hematopoietic stem cell collection in a very-low-weight brain tumor infant with coagulopathy.

Research in these fields are needed:
- PBSC collections: procedure, the rationale use for revascularization in diabetes cardiac patients
- Stem cell transplantation.
- GMA
SUMMARY

- Apheresis is still a new procedure for donors, doctors, and patients.
- The usage of this procedure varies between countries in Asia.
- Apheresis research need includes procedures, clinical applications and education.
Thank you