

## Proceedings of the Annual Symposium on Regenerative Medicine(PASRM)

### **Clinical application of mesenchymal stem cells for aseptic bone necrosis**

Tomoki Aoyama\*

\* Dr. Tomoki Aoyama, Institute for Frontier Medical Sciences, Kyoto University, Japan.

Published online on 14 Nov 2008

Since 2007, we had started clinical trial using mesenchymal stem cell (MSCs) for the treatment of aseptic bone necrosis as a first clinical trial permitted by Japanese Health, Labour and Welfare Ministry.

Aseptic bone necrosis of the femoral head commonly occurs in patients with two to four decades, causing severe musculoskeletal disability. Although its diagnosis is easy with X-ray and MRI, there has been no gold standard invented for treatment of this disease. MSCs represent a stem cell population in adult tissues that can be isolated and expanded in culture, and differentiate into cells with different nature. Combination with  $\beta$ -tricalcium phosphate and vascularized bone graft, we succeeded to treat bone necrosis of the femoral head.

Regenerative medicine using stem cells is hopeful and shed a light on intractable disease. To become widespread, Basic, Translational, Application, and Developmental study is needed.? From an experience of cell therapy using MSCs, we started to research induced pluripotent stem cell (iPS) for clinical application.