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**Deadline for abstract submission: April 15st, 2018**.

**Muscle oxygen saturation during muscle endurance test in patients with malignant hematopoietic disease**

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**Abstract: Background:** Our Previous research showed that patients with malignant hematopoietic disease exhibit anemia before allogeneic hematopoietic stem cell transplantation (allo-HSCT). and that, low serum hemoglobin (serum Hb) was associated with decrease in muscle strength in patients before allo-HSCT. This suggested that impaired oxygen transport function was associated with decline of muscle endurance. However, there is no study whether hemoglobin dynamics during endurance test was associated with exercise load in patients with malignant hematopoietic disease. We have investigated whether NIRS derived muscle oxygen saturation (StO2) was associated with exercise load using dynamometer.

**Methods:** This study included 19 male patients with malignant hematopoietic disease between February 2010 and July 2012 in the Hyogo College of Medicine Hospital in Japan. We have measured StO2 using NIRS (BOM-L1TRS, Omegawave Inc. Japan) during muscle endurance test using dynamometer (Biodex System 4). Our endurance test protocol is consist of 50% isometric contraction at 0.5Hz for 3minutes. Patients were excluded from this study if they could not complete endurance test.

**Results:** Mean serum Hb level is (11.1 +- 1.703). We observe the correlation between exercise load and StO2 (r = 0.537, P < 0.05). However, there is no correlation between serum Hb and StO2 (r = 0.05, P < 0.84)

**Conclusion:** Patients have anemia before allo-HSCT. However, serum Hb was not associated with exercise load. On the other hand, the exercise load performed patients was associated with NIRS derived muscle oxygen saturation. In patients with malignant hematopoietic disease, NIRS derived StO2 might be available to investigated the fatigue during endurance test.

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