

Session: EP073 How long will HBV and other viral vaccine-induced protection last?

**Category: 10d. Antiviral vaccines**

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### **Persistence of yellow fever vaccine-induced antibodies after allogeneic haematopoietic stem-cell transplantation**

Marcel Adler<sup>1</sup>, Valérie Lapierre<sup>1</sup>, Cristina Castilla-Llorente<sup>1</sup>, Jean-Henri Bourhis<sup>1</sup>, Bertrand Gachot<sup>1</sup>, Benjamin Wyplosz<sup>\*2</sup>

<sup>1</sup>*Gustave Roussy*

<sup>2</sup>*Chu Bicêtre; Service des Maladies Infectieuses et Tropicales; Maladies Infectieuses et Tropicales*

**Background:** Immunization using live attenuated vaccines, such as the yellow fever vaccine (YFV), is contraindicated in severely immunocompromised patients such as allogeneic haematopoietic stem cell transplantation (HSCT) recipients within 2 years after transplantation. In patients who underwent solid-organ transplantation and were vaccinated prior to transplantation, long-term persistence of antibodies to YFV have been reported. However, persistence of YF vaccine-induced antibodies have not been investigated yet in adult HSCT recipients. Our study aimed to determine the persistence of YF neutralizing antibodies in a cohort of bone marrow recipients who had been vaccinated prior to HSCT.

**Material/methods:** We retrospectively retrieved allogeneic HSCT recipients who were immunized with the YFV prior to transplantation in our institution. We measured protective levels of YF neutralizing antibodies using the plaque-reduction neutralization test, which is the standard technique for assessing the humoral response to YF immunization.

**Results:** We identified 20 allogeneic HSCT recipients who were immunized with YFV before transplantation. To date, serological analyses are only available for 12 patients. These patients underwent HSCT as treatment of various haematological malignancies: acute leukaemia (n =10), lymphoma (n =1) and multiple myeloma (n = 1). Median age was 46 years (28-67 years). Conditioning regimen consisted of a myeloablative conditioning in 4 cases. HSCT grafts were genoidentical (N =8), haploidentical (N =1) and phenoidentical (N =3). Yellow fever vaccination of the donors was reported in 5 cases. All but one patient (92%) had YF-neutralizing antibodies titres above protective level ( $\geq 10$  U/L) after a median duration of 7.5 months (range: 1-150 months) after HSCT. The median antibody level was 20 U/L (range: 10–80 U/L).

**Conclusions:** Protective antibody titres to YF were observed in a large majority (92%) of patients who were immunized against yellow fever prior to HSCT. Patients who need HSCT and intend to travel to YF-endemic countries should be immunized before undergoing HSCT, if possible.