Vaccination status of patients with chronic liver disease referred to a transplantation center

Teresa Antonini[1], Anne-Marie Roque-Afonso[1], Didier Samuel[1], Jean-Charles Duclos-Vallée[1], Audrey Coilly[1], Jean-Charles Gagnard[2], Ouda Derradji[2], Benjamin Wyplosz[2]

[1] Hôpital Paul Brousse and Paris-Sud University, Villejuif Paris-Sud; [2] APHP, CHU de Bicêtre, Travel Clinic, Tropical and Infectious Diseases Unit, Le Kremlin-Bicêtre, France

BACKGROUND

The vaccination status of liver transplant (LT) candidates is largely unknown. Available studies showed an insufficient vaccine coverage of patients with chronic hepatic disease (CHD). We prospectively investigated the immunization of LT candidates in a large university transplant centre and offered them to be vaccinated during their hospital stay for transplant evaluation. We report the vaccine coverage at admission and after an infectious diseases (ID) specialist consultation.

PATIENTS AND METHODS

During 18 months (June 2015-December 2016), a consultation with an ID specialist, present once a week, was offered to see all LT candidates admitted for a pre-LT evaluation. Patients were asked for their vaccination documents. The immunization rates for diphtheria, poliomyelitis, tetanus (dPT), seasonal influenza and pneumococcal disease were calculated. Serological analyses were performed to determine the immunization status for hepatitis A virus (HAV), hepatitis B virus (HBV), measles virus (MV), and varicella (VZV). Immunizations were offered to all patients during their hospital stay.

RESULTS

During the study period, 150 LT-candidates were admitted for LT evaluation and 76 (51%) had an ID consultation (**Table 1**). Most patients had cirrhosis (83%) of whom most 64% had moderate or severe hepatic insufficiency (Child-Pugh B or C). The median follow-up in a hepatological setting was 7.9 years (range: 0.5 to 23).

Only 11 (15%) of them had vaccination documents. Among all, 20 (26%) had received a dTP shot in the past 10 years, 4 (5%) had received a pneumococcal 13-valent conjugate vaccine (PCV-13) with or without a pneumococcal 23-valent polysaccharidic vaccine (PPSV-23). Among 57 evaluable patients, 16 (27%) had received a flu vaccine during the last epidemic season. Serological analyses were available for all patients: 49 (64%) were seropositive for HAV and 32 (45%) patients without chronic HBV infection were immune against HBV. Most was immune to MV (96%) or VZV (100%). Only 2 (2.6%) LT-candidates, followed by paediatricians for congenital liver disease, had received all recommended vaccinations.

All patients were offered to be immunized according to recommendations. We performed 147 vaccinations : dTP±coq (N=48), PCV-13 ± PPVS-23 (N=63), HAV (N=17), HBV (N=18) and MV (N=1), increasing the vaccination coverage (**Figure 1**). Seroconversion was observed for the patient receiving a measles shot and for 7 patients evaluable after receiving HAV vaccination (2 of them required a second dose 1 month after the first one).

CONCLUSION

Vaccination coverage of patients with CHD needs to be improved before they are referred to a transplantation centre. During the hospital stay, a consultation with an ID specialist greatly contributes to improve their vaccination status. Hepatologists should be educated to vaccinate their patients to further increase vaccination coverage. Serological surveys will be conducted to assess vaccine-induced immune responses just before and after liver transplantation.

Table 1: Clinical characteristics of the 76 patients evaluated before LT

Population, N	**76**
Age in years, median (range)	53 (15-75)
Women/Men (N)	25/51
Birth country, N (%)	
• Europe	61 (80)
• Africa	9 (12)
• Asia	6 (8)
Main chronic disease, N (%)	
Cirrhosis	63 (83)
• Alcoholic ± hepatocarcinoma (HCC)	32 (51)
• Chronic viral hepatitis ± HCC	18 (29)
• Non-alcoholic steatohepatitis	3 (5)
• Other causes	10 (15)
Non-cirrhotic liver disease	13 (17)
Duration of liver disease, median (range)	7.9 (0.5-23)

Stage of liver disease	
Child-Pugh, N (%)	
• Child A	26 (36)
• Child B	24 (32)
• Child C	23 (32)
MELD score (range)	18 ± 9 (1-40)
Follow-up, N (%)	
• Transplantation	37 (47)
• Waiting list	37 (47)
• Death	4 (6)
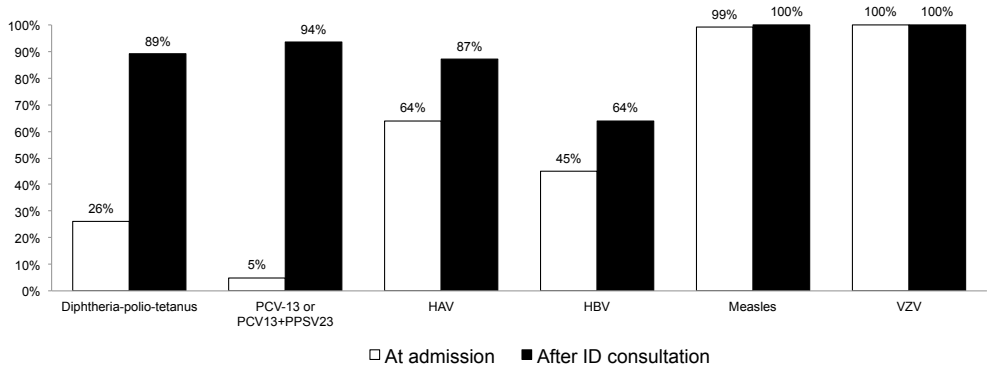
Figure 1: Vaccine coverage and immunization after the ID specialist consultation