**Table 1.** Patient profile of 153 chronic hepatitis C recipients who underwent liver transplantation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable, n (%)/median ± SD** | **All patients**  **N = 153** | **DAA group**  **N = 31 (20.3)** | **DAA naïve group**  **N = 122 (79.7)** | ***P* value** |
| Sex, *n (%)*  Male*/*Female | 72 (47.7)/81 (52.3) | 12 (38.7)/19 (61.3) | 60 (49.6)/62 (50.4) | 0.28 |
| Age at transplant (years), mean± SD | 54.5 | 57.4 ± 7.5 | 57.2 ± 6.6 | 0.85 |
| Follow up (months), mean± SD | 43.6 | 33.2 ± 18.6 | 46.1 ± 21.7 | 0.0029 |
| Serum HCV RNA positive, n (%)  Pre-transplant  Post-transplant |  |  |  |  |
| 70 (45.8) | 1 (3.2) | 69 (56.6) | <0.000001 |
| 61 (39.9) | 0 (0) | 61 (50) | <0.000001 |
| HCV genotype, n (%)  1/2/3/6/undetected | 54 (35.3)/39 (25.5)/2 (1.3)/2 (1.3)/56 (36.6) | 8 (25.8)/10 (32.3)/1 (3.2)/0 (0)/12 (38.7) | 46 (37.7)/29 (23.8)/1 (0.8)/2 (1.6)/44 (36.1) | 0.19 |
| AFP (ng/mL), mean ± SD  Pre-transplant  Post-transplant |  |  |  |  |
| 14.1 ± 70.0 | 11.9 ± 21.4 | 14.7 ± 37.8 | 0.69 |
| 3.8 ± 7.3 | 4.2 ± 5.1 | 3.7 ± 3.2 | 0.52 |
| Liver donor, n (%)  Living donor/Deceased donor | 136 (88.9)/17 (11.1) | 27 (87.1)/4 (12.9) | 109 (87.3)/13 (10.7) | 0.75 |
| HCC diagnosed at LT, n (%)  Absent/Present | 80 (52.3)/73 (47.7) | 19 (61.3)/12 (38.7) | 61 (50)/61 (50) | 0.057 |
| MELD score, mean ± SD | 18.0 ± 18.7 | 17.6 ± 9.6 | 18.2 ± 9.4 | 0.75 |
| Liver explant pathology  Viable tumor identified*, n (%)*  Largest tumor (cm),mean ± SD  Number of lesions,mean  Lymphovascular invasion*, n (%)* |  |  |  |  |
| 60 (39.2) | 18 (58.1) | 42 (34.4) | 0.11 |
| 2.9 ± 3.0 | 2.6 ± 1.1 | 2.9 ± 1.6 | 0.39 |
| 2.5 | 2.3 ± 1.4 | 2.6 ± 1.8 | 0.52 |
| 16 (10.5) | 3 (15.0) | 13 (22.8) | 0.47 |
| Post-LT complications, n (%) |  |  |  |  |
| Biliary complication | 28 (18.3) | 10 (32.3) | 18 (14.8) | 0.02 |
| Acute cellular rejection | 41 (26.8) | 8 (25.8) | 33 (27) | 1.00 |
| Post-LT de novo HCC/Recurrence, n (%) | 6 (3.9)/0 | 0 (0)/0 (0) | 6 (4.9)/0 (0) | 0.35 |
| Student’s t test (tails = 1, type = 2); Chi-Square and Fisher’s exact test | | | | |

**Table 2.** Biliary complications (BCs) and acute cellular rejection (ACR) in 153 chronic C hepatitis recipients who underwent liver transplantation with/without pre-transplant DAA therapy.

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Anti-HCV (+)**  **n = 153 (%)** | | ***P* value** |
| **DAA group**  **n = 31 (20.3)** | **DAA naïve**  **n = 122 (79.7)** |
| Positive BC | 10 (32.3) | 18 (14.8) | P < 0.05 |
| Negative BC | 21 (67.7) | 104 (85.2) |
| Positive ACR | 8 (25.8) | 33 (27.1) | P > 0.05 |
| Negative ACR | 23 (74.2) | 89 (73.0) |

Chi-Square test; *P* value of <0.05 was considered statistically significant

**Table 3.** Comparison of characteristics among recipients with BCs and ACR.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable/median ± SD** | **BCs (+)**  **( n = 28 )** | **BCs (-)**  **( n = 125 )** | ***p*-Value** | **ACR (+)**  **( n = 41)** | **ACR (-)**  **( n = 112 )** | ***p*-Value** |
| Age (years) | 58.0 ± 5.9 | 57.0 ± 6.9 | 0.49 | 59.6 ± 5.3 | 56.3 ± 7.0 | 0.0065 |
| Sex (M/F) | 14/14 | 59/66 | 0.84 | 20/21 | 53/59 | 1.00 |
| Pre-LT DAA use (Yes/No) | 10/18 | 21/104 | 0.036 | 8/33 | 23/89 | 1.00 |
| Graft warm ischemic time (min) | 35.4 ± 4.9 | 37.9 ± 6.7 | 0.16 | 36.3 ± 4.6 | 37.8 ± 7.0 | 0.33 |
| Graft cold ischemic time (min) | 71.1 ± 96.9 | 51.9 ± 64.6 | 0.33 | 34.3 ± 10.5 | 62.8 ± 81.4 | 0.09 |
| Post-LT day-30th |  |  |  |  |  |  |
| AST (U/L) | 67.9 ± 78.2 | 63.5 ± 211.5 | 0.91 | 53.6 ± 40.8 | 68.2 ± 224.5 | 0.69 |
| ALT (U/L) | 84.5 ± 96.0 | 53.6 ± 98.6 | 0.13 | 70.7 ± 58.3 | 55.2 ± 109.4 | 0.40 |
| Total bilirubin (mg/dL) | 0.92 ± 0.75 | 1.53 ± 7.14 | 0.65 | 0.97 ± 1.3 | 1.58 ± 7.5 | 0.61 |
| Albumin (g/dL) | 4.13 ± 0.47 | 4.11 ± 0.48 | 0.84 | 4.0 ± 0.59 | 4.1 ± 0.42 | 0.21 |
| INR | 1.00 ± 0.16 | 1.08 ± 0.34 | 0.30 | 1.03 ± 0.2 | 1.07 ± 0.35 | 0.50 |
| Student’s t test (tails = 1, type = 2); Chi-Square and Fisher’s exact test | | | | | | |

**Table 4.** The fluctuation of pre/post-LT serum anti-HCV Ab titer in cases (n=153) receiving liver transplantation with/without pre-transplant DAA therapy.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **DAA group**  **N = 31 (%)** | | **DAA naive**  **N = 122 (%)** | |
| **Anti HCV Ab titer** | 28.05 ± 33.96a | | 10.50 ± 39.93a’ | |
| Up regulation  N = 25 (80.7) | Down regulation  N = 6 (19.3) | Up regulation  N = 85 (69.7) | Down regulation  N = 37 (30.3) |
| 37.58 ± 30.18b | -11.66 ± 14.02c | 27.97 ± 25.45b’ | -29.62 ± 38.37c’ |
| a vs. a’: p = 0.01301; b vs. b’: p >0.05; c vs. c’: p >0.05; Student’s t test (tails = 1, type = 2) | | | | |

**Table 5.** Fluctuation of serum anti-HCV Ab associated with post-LT biliary complication and acute cellular rejection before and after liver transplantation.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category** | **Biliary complications (BCs)**  **N = 28 (%)** | | | | **Acute cellular rejection (ACR)**  **N = 41 (%)** | | | |
| **Anti-HCV Ab titer**  **(S/CO ratio)** | Up regulation  N = 19 (67.9) | | Down regulation  N = 9 (32.1) | | Up regulation  N = 29 (70.7) | | Down regulation  N = 12 (29.3) | |
| 25.13 ± 25.39a | | -20.39 ± 27.08a’ | | 18.71 ± 18.81b | | -23.18 ± 23.55b’ | |
| DAA (+)  N = 9 (47.4) | DAA (-)  N = 10 (52.6) | DAA (+)  N = 1 (11.1) | DAA (-)  N = 8 (88.9) | DAA (+)  N = 7 (24.1) | DAA (-)  N = 22 (75.9) | DAA (+)  N = 1 (8.3) | DAA (-)  N = 11 (91.7) |
| 34.87 ± 24.41c | 16.36 ± 24.08c’ | -2.55 | -22.63 ± 28.05 | 34.07 ± 27.44d | 13.82 ± 11.34d’ | -23.14 | -23.18 ± 24.71 |

a vs. a’: p <0.001; b vs. b’: p <0.001; a vs. b: p >0.05; a’ vs. b’: p >0.05; c vs. c’: p = 0.05; d vs. d’: p <0.005; Student *t* test (tails = 1, type = 2).