**Supplementary Materials**

Supplemental Table 1: Histopathological types of nephrotic syndrome pattern post hematopoietic stem cell transplant.

Supplemental Table 2: Treatment of renal disease with or without immunosuppressants.

Supplemental Table 3: Associated ‘extra-renal GvHD’

Supplemental Table 4: Comparison of previous studies of nephrotic Syndrome post-hematopoietic stem Cell transplant with current study.

|  |  |  |  |
| --- | --- | --- | --- |
| **Supplemental Table 1:** **Histopathological types of nephrotic syndrome pattern post hematopoietic stem cell transplant.** | | | |
| **Parameter** | **Membranous Nephropathy**  **(N=4)** | **Minimal change Disease**  **(N=3)** | ***p* value** |
| **Baseline characteristics (N=7)** | | | |
| **Gender**  Males (n, %)  Females (n, %) | 1 (25)  3 (75) | 2 (66.7)  1 (33.3) | 0.486 |
| Age (years, mean ± SD) | 30.2 ± 19.6 | 25.7 ± 8.1 | 0.694 |
| **Stem cell source** (n, %)  Bone marrow transplant  Peripheral blood stem cell transplant | 0  4 (100) | 0  3 (100) |  |
| **Conditioning regimen** (n, %)  Non-myeloablative  Reduced intensity  Myeloablative | 1 (25)  1 (25)  2 (50) | 2 (66.7)  0  1 (33.3) | 0.459 |
| Total body irradiation (n, %) | 2 (50) | 1 (33.3) | 0.659 |
| **GvHD prophylaxis** (n, %)  Cyclosporine  Post-transplant cyclophosphamide  Cyclosporine + min-methotrexate  Post-transplant cyclophosphamide + mycophenolate + tacrolimus | 0  0  4 (100)  0 | 0  0  2 (66.7)  1 (33.3) | 0.429 |
| Donor chimerism [%, median (Range)] | 100 (90-100) | 100 (100) | 0.386 |
| **Extra-renal GvHD** (n, %)  Type of extra-renal GvHD (n, %)  Acute GvHD  Chronic GvHD  Site of chronic GvHD (n, %)  Lichen planus  Mucosa  Liver  Lung  Multiple sites  Stage of chronic GvHD (n, %)  Mild  Moderate  Severe  Time to diagnosis from HSCT [months (range)]  Chronic extra-renal GvHD  Nephrotic syndrome pattern post HSCT | 2 (50)  0  2 (50)  1 (50)  1 (50)  1 (50)  1 (50)  1 (50)  1 (50)  0  1 (50)  4 (3-5)  18.5 (13-69) | 1 (33.3)  0  1 (33.3)  1 (100)  1 (100)  0  0  1 (100)  0  1 (100)  0  5  12 (7-77) | 0.659  0.659  0.480  0.857 |
| Time to diagnosis after withdrawal of GvHD prophylaxis [months, median (range)]  Extra-renal GvHD  Nephrotic syndrome post HSCT | 0  9.5 (0-34) | 2  4 (1-61) | 0.724 |
| New onset hypertension (n, %) | 1 (25) | 1 (33.3) | 0.809 |
| Hemoglobin (g/dL, mean ± SD) | 11.8 ± 2.5 | 15.3 ± 2.5 | 0.132 |
| Serum creatinine at biopsy [mg/dL, median (range)] | 0.5 (0.3-3.9) | 1 (0.5-1.4) | 0.480 |
| eGFR CKD-EPI at biopsy [ml/min/1.73 m², median (range)] | 137 (12.1-160) | 97.8 (73.1-151.4) | 0.480 |
| 24-hour urine protein [g/day, median (range)] | 7.1 (3.6-11.4) | 7.5 (1.5-12) | >0.050 |
| Serum albumin (g/dL, mean ± SD) | 2.9 ± 0.5 | 2.9 ± 1.8 | 0.994 |
| Hematuria (n, %)  Visible hematuria  Non-visible hematuria | 0  2 (50) | 0  1 (33.3) | 0.659 |
| Leucocyturia (n, %) | 2 (50) | 1 (33.3) | 0.659 |
| Casts (n, %) | 1 (25) | 1 (33.3) | 0.809 |
| **Kidney biopsy (N=7)** | | | |
| Time to renal biopsy from HSCT [months, median (range)] | 18.5 (13-69) | 12 (7-77) | 0.480 |
| Globally sclerotic glomeruli [%, median (range)] | 0 (0-52) | 0 (0-28) | >0.05 |
| **Glomerular lesions** (n, %)  Mesangiolysis (focal, diffuse) | 1, 0 (25, 0) | 1, 0 (33.3, 0) | 0.809 |
| **Tubular lesions** (n, %)  Acute tubular injury  Tubulitis (t1, t2, t3) | 1 (25)  0 | 0, 0, 0 (0, 0, 0)  0 | 0.350 |
| **Interstitial lesions** (n, %)  Peri-tubular capillaritis (ptc1, ptc2, pc3)  Interstitial inflammation (i1, i2, i3)  IFTA (ci1, ci2, ci3)  Inflammation in area of IFTA  (i-IFTA1, i-IFTA-2, iIFTA-3) | 0  1, 0, 0 (25, 0, 0)  0, 0, 1 (0, 0, 25)  1, 0, 0 (25. 0. 0) | 0  0  0  0 | 0.350  0.350  0.350 |
| **Arteriolar lesions** (n, %)  Arteriosclerosis (cv1, cv2, cv3))  Arteriolar hyalinosis (ah1, ah2, ah3) | 0, 1, 0 (0, 25, 0)  1, 0, 0 (25, 0, 0) | 0, 0, 0  0, 0, 0 | 0.350  0.350 |
| **Immunohistochemistry** (n, %)  Positive glomerular C4d Staining \*  Positive PLA2R staining\* | 3 (100)  1 (25) | 0 | 0.025 |
| **Immunofluorescence** (n, %)  IgG  IgM  IgA  C3 | 4 (100)  0  2 (50)  4 (100) | 0  0  0  0 | 0.257  0.429  0.047 |
| **Electron Microscopy** (n, %) \*  **Foot process effacement**  Near total  Segmental (<50%)  **Deposits**  Sub-epithelial deposits only  Sub-epithelial + sub endothelial + mesangial  Tubuloreticular inclusions  Superimposed TMA | 0  4 (100)  3 (75)  1 (25)  1 (25)  1 (25) | 2(66.7)  1 (33.3)  0  0  0  0  0 | 0.400 |
| **Treatment characteristics (N=7)** | | | |
| Renin angiotensin system inhibitors (n, %) | 1 (25) | 2 (66.7) | 0.486 |
| **Immunosuppression** (n, %)  Steroid alone  Steroid plus add-on immunosuppressant  Plasmapheresis | 1 (25)  2 (50)  0 | 2 (66.7)  0  0 | 0.657 |
| **Outcome at last follow up (N=7)** | | | |
| >3 months follow up (n, %) | 4 (100) | 3 (100) |  |
| Follow-up [months, median (range)] | 14 (5-37) | 22 (19-81) | 0.157 |
| **Renal outcomes** (n, %)  Remission  Stabilization  Worsening  Kidney failure | 3 (75)  0  0  1 (25) | 2 (66.7)  1 (33.3)  0  0 | 0.472 |
| **Proteinuria outcomes** (n, %) \*  Complete remission  Partial remission  No remission | 2 (50)  1 (25)  1 (25) | 2 (100)  0  0 | 0.472 |
| Time to complete remission of proteinuria [median (range)] | 0.5 (0-1) | 4 (1-7) | 0.221 |
| Post-transplant infections (n, %) | 2 (50) | 2 (66.7) | 0.659 |
| Death (n, %) | 1 (25) | 0 | 0.350 |
| CKD-EPI, Chronic Kidney Disease-Epidemiology; eGFR, Estimated glomerular filtration rate; GvHD, Graft versus host disease; HSCT, Hematopoietic stem cell transplant; IFTA, Interstitial fibrosis and tubular atrophy; PLA2R, Phospholipase 2 Receptor; SD, Standard deviation.  \* N equals 5 (C4d staining), 4 (PLA2R staining), 6 (Proteinuria outcomes), 5 (Electron microscopy) | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Supplemental Table 2:** **Treatment of renal disease with and without immunosuppressants.** | | | |
| **Parameter** | **Immunosuppression Yes**  **(N=12)** | **Immunosuppression No**  **(N=7)** | ***p* value** |
| **Baseline characteristics (N=19)** | | | |
| **Gender (n, %)**  Males  Females | 7 (58.3)  5 (41.7) | 6 (85.7)  1 (14.3) | 0.333 |
| Age (years, mean ± SD) | 26.7 ± 12.4 | 37.8 ± 14.8 | 0.095 |
| **Stem cell source** (n, %)  Bone marrow transplant  Peripheral blood stem cell transplant | 2 (16.7)  10 (83.3) | 0  7 (100) | 0.509 |
| **Conditioning regimen** (n, %)  Non-myeloablative  Reduced intensity  Myeloablative | 7 (71.4)  1 (8.3)  4 (33.3) | 5 (71.4)  1 (14.3)  1 (14.3) | 0.804 |
| Total body irradiation (n, %) | 8 (66.7) | 2 (28.6) | 0.170 |
| **GvHD prophylaxis** (n, %)  Cyclosporine  Post-transplant cyclophosphamide  Cyclosporine + mini-methotrexate  Post-transplant cyclophosphamide + mycophenolate + tacrolimus | 1 (8.3)  3 (25)  7 (58.3)  1 (8.3) | 0  1 (14.3)  6 (85.7)  0 | 0.847 |
| Donor chimerism [%, median (range)] | 100 (90-100) | 100 (100) | 0.445 |
| **Extra-renal GvHD** (n, %)  Type of extra-renal GvHD (n, %)  Acute GvHD  Chronic GvHD  Time to diagnosis from HSCT [months (range)]  Acute extra-renal GvHD  Chronic extra-renal GvHD  TMA or NS post-HSCT  Time to diagnosis after withdrawal of GvHD prophylaxis [months, median (range)]  Extra-renal GvHD  TMA or NS post-HSCT | 7 (58.3)  3 (25)  6 (50)  1 (1)  4 (1-9)  12.5 (1-21)  1 (0-11)  2 (0-25) | 4 (57.1)  2 (28.6)  3 (42.8)  1 (0-8)  5 (3-5)  17 (8-77)  0.5 (0-1)  22 (2-61) | 0.960  0.978  >0.05  0.784  0.056  0.594  0.038 |
| New onset hypertension (n, %) | 3 (25) | 3 (42.9) | 0.216 |
| Hemoglobin (g/dL, mean ± SD) | 10.9 ± 2.9 | 11.6 ± 3.1 | 0.599 |
| Serum creatinine at biopsy [mg/dL, median (IQR)] | 1.8 (0.5-2.1) | 2.8 (2.1-5.5) | 0.018 |
| eGFR CKD-EPI at biopsy [ml/min/1.73 m², median (IQR)] | 55.5 (36-143.1) | 25.5 (11.8-30.9) | 0.011 |
| 24-hour urine protein [g/day, median (IQR)] | 1.5 (0.4-7.5) | 0.7 (0.5-4) | 0.580 |
| Serum albumin (g/dL, mean ± SD) | 3.2 ± 0.9 | 3.9 ± 0.7 | 0.087 |
| Hematuria (n, %)  Visible hematuria  Non-visible hematuria | 0  3 (25) | 0  0 | 0.263 |
| Leucocyturia (n, %) | 4 (33.3) | 0 | 0.245 |
| Casts (n, %) | 3 (25) | 2 (28.6) | 0.865 |
| **Kidney Biopsy (N=19)** | | | |
| Time to biopsy from HSCT [months, median (range)] | 12.5 (1-21) | 17 (8-77) | 0.056 |
| **Pattern of renal disease** (n, %)  TMA  Nephrotic Syndrome | 7 (58.3)  5 (41.7) | 5 (71.4)  2 (28.6) | 0.656 |
| Globally sclerotic glomeruli [%, median (IQR)] | 0 (0-18.5) | 9 (0-28) | 0.157 |
| **Glomerular lesions** (n, %)  Mesangiolysis (focal, diffuse) | 7, 1 (58.3, 14.3) | 4, 1 (57.1, 14.3) | 0.981 |
| **Tubular lesions** (n, %)  Acute tubular injury  Tubulitis (t1, t2, t3) | 8 (66.7)  0 | 6 (85.7)  2 (28.6) | 0.794  0.123 |
| **Interstitial lesions** (n, %)  Peri-tubular capillaritis (ptc1, ptc2, pc3)  Interstitial inflammation (i1, i2, i3)  IFTA (ci1, ci2, ci3)  Inflammation in area of IFTA  (i-IFTA1, i-IFTA-2, iIFTA-3) | 0  1, 2, 0 (8.3, 16.7, 0)  3, 0, 0 (25, 0, 0)  2, 1, 0 (16.7. 8.3. 0) | 0  1, 1, 1 (14.3, 14.3, 14.3)  2, 0, 1 (28.6, 0, 14.3)  0, 2, 0 (0, 28.6, 0) | 0.745  0.574  0.583 |
| **Arteriolar lesions** (n, %)  Arteriosclerosis (cv1, cv2, cv3))  Arteriolar hyalinosis (ah1, ah2, ah3) | 1, 2, 0 (8.3, 16.7, 0)  2, 2, 0 (16.7, 16.7, 0) | 1, 2, 0 (14.3, 28.6, 0)  3, 0, 0 (42.9, 0, 0) | 0.796  0.489 |
| **Immunohistochemistry** (n, %) \*  Positive C4d staining | 4 (44.4) | 3 (60) | 0.577 |
| **Immunofluorescence** (n, %)  IgG  IgM  IgA  C3 | 3 (25)  0  2 (16.7)  3 (25) | 1 (14.3)  2 (28.6)  1 (14.3)  1 (14.3) | 0.718  0.123  0.891  0.581 |
| **Treatment characteristics (N=19)** | | | |
| Renin angiotensin system inhibitors (n, %) | 5 (41.7) | 2 (28.6) | 0.486 |
| Immunosuppression (n, %)  Steroid alone  Steroid plus add-on immunosuppressant  Plasmapheresis | 5 (41.7)  7 (58.3)  1 (8.3) | 0  0  0 | 0.433 |
| **Outcome at last follow-up (N=17)** | | | |
| >3 months follow-up (n, %) | 11 (91.7) | 6 (85.7) |  |
| Follow-up [months, median (range)] | 37 (5-162) | 14 (7-22) | 0.078 |
| **Renal outcomes** (n, %)  Remission  Stabilization  Worsening  Kidney failure | 8 (72.7)  1 (9.1)  0  2 (18.2) | 1 (16.7)  1 (16.7)  2 (33.3)  2 (33.3) | 0.044 |
| **Proteinuria outcomes** (n, %) \*  Complete remission  Partial remission  No remission | 4 (50)  2 (25)  2 (25) | 2 (50)  0  2 (50) | 0.758 |
| Post-transplant infections (n, %) | 7 (63.6) | 5 (83.3) | 0.600 |
| Death (n, %) | 2 (18.2) | 3 (50) | 0.280 |
| CKD-EPI, Chronic Kidney Disease-Epidemiology; eGFR, Estimated Glomerular Filtration Rate; GvHD, Graft Versus Host Disease; IFTA, Interstitial fibrosis and tubular atrophy; IQR, Inter-quartile range; SD, Standard deviation. \* n equal 14 (C4d staining), 12 (proteinuria outcomes) | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Supplemental Table 3: ‘Associated extra-renal GvHD****’** | | | |
| **Parameter** | **Associated extra-renal GVHD Yes**  **(N=11)** | **Associated extra-renal GVHD No**  **(N=8)** | ***p* value** |
| **Baseline characteristics (N=19)** | | | |
| **Gender (n, %)**  Males  Females | 10 (90.9)  1 (9.1) | 3 (37.5)  5 (62.5) | 0.041 |
| Age (years, mean ± SD) | 29.3 ± 15.6 | 32.9 ± 12.5 | 0.597 |
| **Stem cell source** (n, %)  Bone marrow transplant  Peripheral blood stem cell transplant | 2 (18.2)  9 (81.8) | 0  8 (100) | 0.485 |
| **Conditioning regimen** (n, %)  Non-myeloablative  Reduced intensity  Myeloablative | 5 (45.5)  2 (18.2)  4 (36.4) | 7 (87.5)  0  1 (12.5) | 0.245 |
| Total body irradiation (n, %) | 7 (63.6) | 3 (37.5) | 0.370 |
| **GvHD prophylaxis** (n, %)  Cyclosporine  Post-transplant cyclophosphamide  Cyclosporine + mini-methotrexate  Post-transplant cyclophosphamide + mycophenolate  tacrolimus | 1 (9.1)  2 (18.2)  7 (63.6)  1 (9.1) | 0  2 (25)  6 (75)  0 | 0.649 |
| Donor chimerism [%, median (IQR)] | 100 (100-100) | 100 (100-100) | 0.394 |
| **Type of extra-renal GvHD** (n, %)  Acute GvHD  Chronic GvHD | 5 (45.4)  9 (81.8) | 0  0 |  |
| **Time to diagnosis after withdrawal of GvHD prophylaxis** [months, median (IQR)]  Extra-renal GvHD  TMA or NS post-HSCT | 0.5 (0-3.5)  4 (2-25) | 4.5 (1.25-15) | 0.868 |
| **Hypertension** (n, %)  New onset hypertension  Long standing hypertension | 3 (27.3)  1 (9.1) | 3 (37.5)  0 | 0.644 |
| Serum creatinine at biopsy [mg/dl, median (IQR)] | 2.3 (1.4-3.1) | 1.4 (0.6-2.1) | 0.283 |
| eGFR CKD-EPI at biopsy [ml/min/1.73 m², median (IQR)] | 35.5 (24.6-81.9) | 73.1 (25.5-118.3) | 0.409 |
| 24-hour urine protein [g/day, median (IQR)] | 1.1 (0.2-4.6) | 1.5 (0.6-10.5) | 0.526 |
| Serum albumin (g/dL, mean ± SD) | 3.9 (2.8-4) | 3.6 (2.7-4.1) | 0.967 |
| **Kidney biopsy (n=19)** | | | |
| **Pattern of renal disease** (n, %)  Thrombotic microangiopathy  Nephrotic syndrome | 8 (72.7)  3 (27.3) | 4 (50)  4 (50) | 0.377 |
| Time to renal biopsy from HSCT [months, median (IQR)] | 15 (9-17) | 12.5 (9-19.5) | 0.709 |
| Globally sclerotic glomeruli [%, median (IQR)] | 0 (0-17) | 0 (0-10.5) | 0.811 |
| **Glomerular lesions** (n, %)  GBM double contouring (cg1, cg2, cg3)  Mesangiolysis (Focal, diffuse) | 3 (27.3)  6, 2 (54.5, 18.2) | 0  5, 1 (62.5, 12.5) | 0.228  0.926 |
| **Tubular lesions** (n, %)  Acute tubular injury  Tubulitis (t1, t2, t3) | 9 (81.8)  1 (9.1) | 5 (62.5)  1 (12.5) | 0.802  0.678 |
| **Interstitial lesions** (n, %)  Interstitial inflammation (>25%)  IFTA (>25%) | 2 (18.2)  1 (9.1) | 2 (25)  0 | 0.719  0.381 |
| **Arteriolar lesions** (n, %)  Arteriosclerosis (>25%)  Arteriolar hyalinosis (>25%) | 3 (27.3)  2 (18.2) | 1 (12.5)  0 | 0.603  0.485 |
| **Immunofluorescence** (n, %)  Positive C3 staining  Positive IgG staining  Positive IgM staining  Positive IgA staining | 1 (9.1)  1 (9.1)  0  0 | 3 (37.5)  3 (37.5)  0  0 | 0.262  0.347 |
| **Immunohistochemistry** (n, %) \*  C4d staining | 1 (14.3) | 3 (42.9) | 0.559 |
| **Treatment characteristics (N=19)** | | | |
| Renin angiotensin system inhibitors (n, %) | 3 (27.3) | 4 (50) | 0.377 |
| **Immunosuppression** (n, %)  Steroid alone  Steroid plus add-on immunosuppressant  Plasmapheresis | 2 (18.2)  5 (45.5)  1 (9.1) | 3 (37.5)  2 (25)  0 | 0.838  0.838  0.381 |
| **Outcomes at last follow-up (n=17)** | | | |
| >3 months follow-up (n, %) | 10 (90.9) | 7 (87.5) | 0.811 |
| Follow-up duration [months, median (IQR)] | 20 (11.25-53) | 22 (12-47) | 0.961 |
| **Renal outcomes** (n, %)  Remission  Stabilization  Worsening  Kidney failure | 4 (40)  1 (10)  1 (10)  4 (40) | 5 (71.4)  1 (14.3)  1 (14.3)  0 | 0.327 |
| **Proteinuria outcomes** (n, %) \*  Complete remission  Partial remission  No remission | 4 (50)  0  4 (50) | 2 (50)  2 (50)  0 | **0**.050 |
| Post-transplant infections (n, %) | 10 (90.9) | 4 (50) | 0.046 |
| Death (n, %) | 6 (60) | 0 | 0.023 |
| CKD-EPI, Chronic Kidney Disease-Epidemiology; eGFR, Estimated glomerular filtration rate; GvHD, Graft versus Host Disease; GBM, Glomerular basement membrane; IFTA, Interstitial fibrosis and tubular atrophy; IQR, Inter quartile range; SD, Standard deviation.  \*n equals 14 (C4d staining) and 12 (Proteinuria outcomes) | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Supplemental table 4: Comparison of previous studies of nephrotic syndrome post-hematopoietic stem cell transplant with current study.** | | | | | | | | | | | |
| **Author** | **Beyar-Katz et al.**  **[33]** | **Niscola**  **et al.**  **[34]** | **Hu**  **et al.**  **[35]** | **Colombo et al.**  **[36]** | **Fraile**  **et al.**  **[37]** | **Srinivasan et al.**  **[38]** | **Reddy**  **et al.**  **[39]** | **Hiramatsu**  **et al.**  **[40]** | **Huang**  **et al.**  **[41]** | **Terrier**  **et al.**  **[42]** | **Current study** |
| Cohort duration | 1988-2015 | Up to 2012 | - | 1992-2003 | 1995-2012 | 1997-2003 | 1994-2002 | 2000-2012 | 2006-2009 | - | 2005-2020 |
| Country | Pooled analysis | Pooled Analysis | Pooled Analysis | Italy | Spain | USA | USA | Japan | China | France | India |
| Number of patients | 116 | 69 | 95 | 6 | 6 | 7 | 9 | 5 | 5 | 5 | 7 |
| Incidence of renal GvHD (%) | - | - | - | 2.8 | 1.03 | 6.3 | 1 | 0.6 | - | - | 0.3 |
| Gender (Male: Female ratio) | 2.4:1 | 1.5:1 | 2.06:1 | 6:1 | 1:1 | 1.3:1 | 2:1 | 4:1 | 3:2 | 2:3 | 0.6:1 |
| Age [years, mean ± SD or median (range)] | 44 (18-68) | 43 (5-68) | 40 ± 16 | 47.5 ±11.8 | 45.3 ± 12 | 46 (33-59) | 54 (37-58) | 50.2 ± 9.3 | 37.8 ±15.5 | 51 ± 9.4 | 28.3 ± 14.8 |
| **Basic hematologic disease** (%)  Aplastic anemia  Hematological malignancies  Thalassemia  Myelodysplastic syndrome  Others | -  75.9  -  -  24.1 | -  76.6  -  -  23.4 | - | 66.6  33.3 | -  100  -  -  - | -  28.6  -  -  71.4 | -  66.6  -  11.1  22.2 | -  80  -  20  - | -  100  -  -  - | -  80  -  20  - | 57.1  28.6  14.3 |
| **Stem cell source** (%)  Bone marrow transplant  Peripheral blood stem cell transplant  Cord blood | 20.7  77  2.3 | - | 29  61  0 | 16.6  83.3  0 | -  100  - | - | 0  100  0 | -  -  100 | - | - | 0  100  0 |
| **Type of Donor** (%)  Matched related donor  Matched unrelated donor  Haploidentical donor | 84.4  13  - | - | - | 83.3  16.7  0 | 83.3  16.7  - | 96.3  3.7 | 77.8  22.2  0 | - | 80  20  - | - | 85.7  -  14.3 |
| **Conditioning regimen** (n, %)  Non-myeloablative  Reduced intensity  Myeloablative | -  25.5  74.5 | - | 36 | -  33.3  66.7 | 16.7  -  83.3 | 100  0  0 | 0  22.2  77.8 | -  -  100 | -  -  100 | 80  0  20 | 42.9  14.3  42.9 |
| Total body irradiation (%) | 51.9 | - | - | 16.7 | - | - | 55.5 | 80 | 20 | 40 | 42.9 |
| **GvHD prophylaxis** (%)  CNI  CNI + methotrexate  Others |  | - | - | 100  -  - | 83.3  -  16.7 | - | -  100  - | - | - | 0  80  20 | 85.7  14.3 |
| Time to renal biopsy from HSCT [months, median (range)] | 20.5  (3-174) | 17  (3-134) | 22.9 ± 25.2 | 23  (13-43) | 33 ± 11.5 | 10.6  (3.9-40.1) | - | 18  (9-40) | 19  (10-22) | 24.4  (14-37) | 16  (7-77) |
| Hypertension at presentation (%) |  | - | - | - | - | - | 77.8 | - | - | - | 28.6 |
| Serum creatinine at biopsy [mg/dL, median (range)] | - | - | - | 0.9  (0.7-1.07) | - | 0.9  (0.5-1.2) | - | 1  (0.8-1.3 | 0.7  (0.6-0.8) | - | 0.6  (0.4-1.4) |
| eGFR CKD-EPI at biopsy [ml/min/1.73 m², median (range)] | - | - | - | - | - | - | - | 47  (45-89) | - | 57  (41-78.4) | 118.3  (73.1-155.7) |
| 24-hour urine protein [g/day, median (IQR)] | 8.5 (0-35) | - | 8.4 | 6.5  (3.5-12) | 11.8 ± 9 | 16.5  (3-24) | 3.6-27 | 7.9  (5.9-13) | 4.6  (3.3-6.5) | 8.5  (7.9-16.2) | 7.5  (3.6-11.4) |
| **Histological diagnosis** (%)  Minimal change disease  Membranous nephropathy  Focal segmental glomerulosclerosis  IgA nephropathy  Membranoproliferative glomerulonephritis  Lupus nephritis  Not biopsied | 19  65.5  7.7  2.6  5.2  -  - | -  100  -  -  -  -  - | 20  67.4  -  -  -  -  - | 16.7  66.7  -  16.7  -  -  - | 16.7  66.7  -  -  -  16.7  - | -  57.2  -  -  -  -  42.8 | 11.1  55.5  -  -  -  -  33.3 | -  80  -  -  20  -  - | -  100  -  -  -  -  - | -  100  -  -  -  -  - | 42.9  57.1  -  -  -  -  - |
| Renin angiotensin system inhibitors (%) | - | - | - | - | - | - | 77.8 | - | - | 100 | 42.9 |
| **Immunosuppression** (%)  Steroid alone  Steroid plus add-on immunosuppressant | 16.8  73.5 | -  89.5 | - | -  100 | 16.7  83.3 | 28.6  71.4 | 33.3  66.7 | 20  60 | 20  80 | -  100 | 42.9  28.6 |
| Extra-renal GvHD (%)  **Type of Extra-renal GvHD** (%)  Acute GvHD  Chronic GvHD  Time to diagnosis after withdrawal of GvHD prophylaxis [months, Median (Range)]  Extra-renal GvHD  NS post HSCT  Breakthrough GVHD (%) | 87.2  59.6  75.2  -  6 9  (0.75-29)  42.1 | -  68  86  -  -  - | 72  -  -  -  3.7 ± 6  - | 100  16.7  100  4  (3.2-8.2)  23  (13-43)  - | 50  -  -  -  13 ± 9.8  16.7 | 57.1  -  57.1  -  -  57.1 | 77.8  22.2  77.8  11.4  (6.2-19.2)  24.5  (12.8-42.6)  - | 100  0  100  -  -  - | 100  -  100  -  4  (1-16)  - | 100  80  100  -  -  - | 42.9  0  42.9  0  (0-2)  4  (0-61)  15.8 |
| **Outcomes**  Follow up duration  [months, median (range)]  Complete remission of proteinuria (%)  Kidney failure (%)  Death (%) | -  63.5  19.2  13.7 | -  59  13  - | 12  (1-96)  70  -  13 | 46  (18.5-61.2)  66.7  0  16.7 | -  66.7  -  - | 33.6  28.6  42.8  71.4 | -  66.7  -  22.2 | 96  (38-144)  100  20  - | -  20  0  0 | 17.5  (8-36)  50  25  25 | 19  (5-81)  66.7  14.3  14.3 |
| CKD-EPI, Chronic Kidney Disease-Epidemiology; CNI, Calcineurin inhibitor; eGFR, Estimated glomerular filtration rate; GvHD, Graft versus Host Disease; HSCT, Hematopoietic stem cell transplant; SD, Standard deviation. | | | | | | | | | | | |