KID\_AI cohort description

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# Descriptive statistics

## Renal graft loss

theme\_gtsummary\_journal(journal = "nejm")

## Setting theme `New England Journal of Medicine`

theme\_gtsummary\_compact()

## Setting theme `Compact`

orly |> tbl\_summary(by=loss) |> add\_overall() |> add\_p()

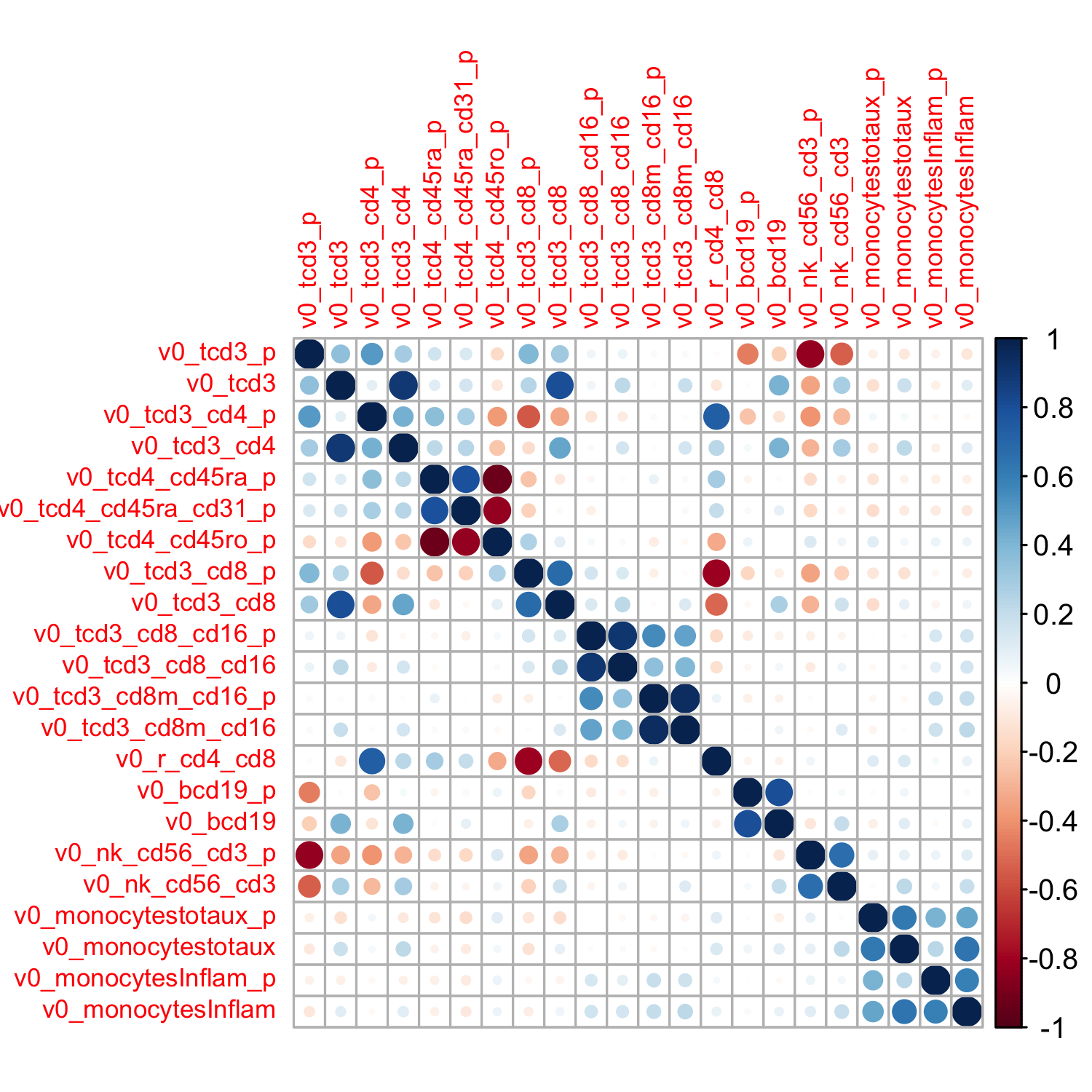
## There was an error in 'add\_p()/add\_difference()' for variable 'nephro\_ini', p-value omitted:  
## Error in stats::fisher.test(c(NA, "Autre néphropahtie héréditaire (ANH)", : FEXACT error 7(location). LDSTP=18480 is too small for this problem,  
## (pastp=174.416, ipn\_0:=ipoin[itp=76]=2295, stp[ipn\_0]=174.422).  
## Increase workspace or consider using 'simulate.p.value=TRUE'  
## Warning for variable 'delai\_v3\_RAigu':  
## simpleWarning in wilcox.test.default(x = DATA[[1L]], y = DATA[[2L]], ...): cannot compute exact p-value with ties  
## Table printed with {flextable}, not {gt}. Learn why at  
## https://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html  
## To suppress this message, include `message = FALSE` in the code chunk header.

| **Characteristic** | **Overall**, N = 1,1021 | **0**, N = 9661 | **1**, N = 1361 | **p-value**2 |
| --- | --- | --- | --- | --- |
| age | 54 (43 – 63) | 54 (43 – 63) | 55 (46 – 62) | 0.97 |
| sexe |  |  |  | 0.76 |
| Female | 407 (37) | 355 (37) | 52 (38) |  |
| Male | 692 (63) | 608 (63) | 84 (62) |  |
| Unknown | 3 | 3 | 0 |  |
| nephro\_ini |  |  |  |  |
| Autre | 232 (24) | 202 (24) | 30 (24) |  |
| Autre néphropahtie héréditaire (ANH) | 23 (2.4) | 19 (2.3) | 4 (3.2) |  |
| Diabète insulino-dépendant type I (DTI) | 15 (1.6) | 15 (1.8) | 0 (0) |  |
| Diabète insulino-dépendant type II (DTII) | 103 (11) | 89 (11) | 14 (11) |  |
| Glomérulnéphrite chronique (GNC) | 248 (26) | 214 (25) | 34 (27) |  |
| Néphopathie interstitielle chronique (NI) | 66 (6.8) | 56 (6.7) | 10 (8.1) |  |
| Néphroangio-sclérose (NA) | 98 (10) | 87 (10) | 11 (8.9) |  |
| Polykystose rénale (PKR) | 180 (19) | 159 (19) | 21 (17) |  |
| Unknown | 137 | 125 | 12 |  |
| mDialyse |  |  |  | 0.009 |
| DP | 188 (17) | 165 (17) | 23 (17) |  |
| DP/HD | 50 (4.6) | 40 (4.2) | 10 (7.5) |  |
| HD | 751 (69) | 654 (68) | 97 (73) |  |
| NON | 103 (9.4) | 100 (10) | 3 (2.3) |  |
| Unknown | 10 | 7 | 3 |  |
| dDialyse | 30 (18 – 48) | 29 (18 – 48) | 36 (21 – 52) | 0.043 |
| Unknown | 149 | 136 | 13 |  |
| trans\_rein | 112 (10) | 99 (10) | 13 (9.6) | 0.80 |
| trans\_rein\_nbre |  |  |  | 0.22 |
| 1 | 91 (83) | 82 (85) | 9 (69) |  |
| 2 | 14 (13) | 11 (11) | 3 (23) |  |
| 3 | 5 (4.5) | 4 (4.1) | 1 (7.7) |  |
| Unknown | 992 | 869 | 123 |  |
| trans\_autre | 19 (1.7) | 16 (1.7) | 3 (2.2) | 0.72 |
| trans\_organe |  |  |  | 0.77 |
| CARDIAQUE PULMONAIRE | 1 (5.3) | 1 (6.3) | 0 (0) |  |
| COEUR | 4 (21) | 4 (25) | 0 (0) |  |
| FOIE | 11 (58) | 8 (50) | 3 (100) |  |
| HEPATIQUE | 1 (5.3) | 1 (6.3) | 0 (0) |  |
| MOELLE | 1 (5.3) | 1 (6.3) | 0 (0) |  |
| PANCREAS | 1 (5.3) | 1 (6.3) | 0 (0) |  |
| Unknown | 1,083 | 950 | 133 |  |
| hepatiteB | 45 (4.1) | 42 (4.3) | 3 (2.2) | 0.24 |
| hepatiteB\_active | 3 (0.3) | 3 (0.3) | 0 (0) | >0.99 |
| hepatiteB\_chronique | 30 (2.7) | 28 (2.9) | 2 (1.5) | 0.57 |
| hepatiteC | 18 (1.6) | 17 (1.8) | 1 (0.7) | 0.71 |
| hepatiteC\_active | 2 (0.2) | 2 (0.2) | 0 (0) | >0.99 |
| hepatiteC\_chronique | 10 (0.9) | 10 (1.0) | 0 (0) | 0.62 |
| VIH | 8 (0.7) | 8 (0.8) | 0 (0) | 0.61 |
| cancer | 83 (7.5) | 73 (7.6) | 10 (7.4) | 0.93 |
| eve\_cardio\_acfa | 32 (2.9) | 26 (2.7) | 6 (4.4) | 0.27 |
| eve\_cardio\_hta | 388 (35) | 342 (35) | 46 (34) | 0.72 |
| eve\_cardio\_ic | 49 (4.4) | 41 (4.2) | 8 (5.9) | 0.39 |
| eve\_cardio\_nd | 25 (2.3) | 21 (2.2) | 4 (2.9) | 0.54 |
| patho\_coro\_idm | 26 (2.4) | 24 (2.5) | 2 (1.5) | 0.76 |
| patho\_coro\_rc | 42 (3.8) | 37 (3.8) | 5 (3.7) | 0.93 |
| patho\_coro\_angor | 28 (2.5) | 22 (2.3) | 6 (4.4) | 0.14 |
| patho\_coro\_ms | 2 (0.2) | 2 (0.2) | 0 (0) | >0.99 |
| patho\_coro\_nd | 55 (5.0) | 41 (4.2) | 14 (10) | 0.002 |
| mal\_cv\_avc | 35 (3.2) | 27 (2.8) | 8 (5.9) | 0.066 |
| mal\_cv\_ec | 5 (0.5) | 3 (0.3) | 2 (1.5) | 0.12 |
| mal\_cv\_tc | 2 (0.2) | 2 (0.2) | 0 (0) | >0.99 |
| mal\_cv\_nd | 49 (4.4) | 39 (4.0) | 10 (7.4) | 0.079 |
| aomi\_ampu | 3 (0.3) | 2 (0.2) | 1 (0.7) | 0.33 |
| aomi\_ci | 6 (0.5) | 4 (0.4) | 2 (1.5) | 0.16 |
| aomi\_revascu | 13 (1.2) | 11 (1.1) | 2 (1.5) | 0.67 |
| aomi\_nd | 57 (5.2) | 43 (4.5) | 14 (10) | 0.004 |
| patho\_aort | 22 (2.0) | 19 (2.0) | 3 (2.2) | 0.75 |
| eve\_pul\_bpco | 25 (2.3) | 18 (1.9) | 7 (5.1) | 0.026 |
| eve\_pul\_emph | 3 (0.3) | 1 (0.1) | 2 (1.5) | 0.042 |
| eve\_pul\_ac | 4 (0.4) | 4 (0.4) | 0 (0) | >0.99 |
| eve\_pul\_ir | 11 (1.0) | 7 (0.7) | 4 (2.9) | 0.037 |
| diabete | 209 (19) | 178 (19) | 31 (23) | 0.22 |
| Unknown | 8 | 7 | 1 |  |
| diabete\_type |  |  |  | 0.14 |
| Autre | 4 (2.6) | 3 (2.3) | 1 (4.5) |  |
| Gestationnel | 1 (0.6) | 1 (0.8) | 0 (0) |  |
| Type I | 31 (20) | 30 (23) | 1 (4.5) |  |
| Type II | 118 (77) | 98 (74) | 20 (91) |  |
| Unknown | 948 | 834 | 114 |  |
| dyslipidemie | 465 (43) | 409 (43) | 56 (42) | 0.91 |
| Unknown | 18 | 14 | 4 |  |
| hta | 925 (85) | 812 (86) | 113 (84) | 0.53 |
| Unknown | 20 | 19 | 1 |  |
| IMC | 25.0 (22.0 – 28.5) | 25.0 (22.0 – 28.2) | 25.7 (22.0 – 29.6) | 0.19 |
| Unknown | 16 | 12 | 4 |  |
| sCMV |  |  |  | 0.056 |
| D- / R- | 215 (20) | 185 (19) | 30 (22) |  |
| D- / R+ | 264 (24) | 237 (25) | 27 (20) |  |
| D+ / R- | 250 (23) | 209 (22) | 41 (31) |  |
| D+ / R+ | 366 (33) | 330 (34) | 36 (27) |  |
| Unknown | 7 | 5 | 2 |  |
| ac\_antiHLA | 347 (32) | 299 (32) | 48 (36) | 0.30 |
| Unknown | 31 | 27 | 4 |  |
| tii\_induction |  |  |  | 0.57 |
| NON | 96 (8.9) | 84 (8.8) | 12 (9.1) |  |
| SAL | 319 (29) | 277 (29) | 42 (32) |  |
| SIM | 659 (61) | 583 (61) | 76 (58) |  |
| SIM/SAL | 9 (0.8) | 7 (0.7) | 2 (1.5) |  |
| Unknown | 19 | 15 | 4 |  |
| ent\_aziathioprine | 6 (0.5) | 6 (0.6) | 0 (0) | >0.99 |
| ent\_ciclosporine | 274 (25) | 243 (25) | 31 (23) | 0.55 |
| ent\_corticoides | 1,006 (91) | 883 (91) | 123 (90) | 0.71 |
| ent\_everolimus | 23 (2.1) | 18 (1.9) | 5 (3.7) | 0.19 |
| ent\_mpa | 45 (4.1) | 38 (3.9) | 7 (5.1) | 0.50 |
| ent\_mmf | 1,015 (92) | 898 (93) | 117 (86) | 0.005 |
| ent\_sirolimus | 5 (0.5) | 2 (0.2) | 3 (2.2) | 0.015 |
| ent\_tacrolimus | 767 (70) | 677 (70) | 90 (66) | 0.35 |
| ent\_nulojix | 4 (0.4) | 2 (0.2) | 2 (1.5) | 0.077 |
| ent\_nd | 1 (<0.1) | 0 (0) | 1 (0.7) | 0.12 |
| tii\_p\_antiCMV | 639 (60) | 572 (61) | 67 (52) | 0.038 |
| Unknown | 35 | 29 | 6 |  |
| tii\_p\_antiCMV\_ttt |  |  |  | 0.34 |
| 3 | 1 (0.2) | 1 (0.2) | 0 (0) |  |
| Valacyclovir | 92 (15) | 86 (15) | 6 (9.4) |  |
| Valgancyclovir | 530 (85) | 472 (84) | 58 (91) |  |
| Unknown | 479 | 407 | 72 |  |
| v0\_tcd3\_p | 78 (71 – 83) | 78 (71 – 83) | 75 (69 – 83) | 0.049 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd3 | 947 (670 – 1,242) | 953 (678 – 1,248) | 878 (641 – 1,198) | 0.15 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd3\_cd4\_p | 49 (42 – 56) | 49 (42 – 56) | 50 (42 – 57) | 0.43 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd3\_cd4 | 596 (430 – 803) | 603 (429 – 803) | 573 (439 – 778) | 0.58 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd4\_cd45ra\_p | 40 (28 – 51) | 39 (27 – 51) | 40 (30 – 51) | 0.28 |
| Unknown | 13 | 11 | 2 |  |
| v0\_tcd4\_cd45ra\_cd31\_p | 24 (15 – 33) | 24 (15 – 33) | 26 (16 – 33) | 0.57 |
| Unknown | 14 | 12 | 2 |  |
| v0\_tcd4\_cd45ro\_p | 61 (50 – 72) | 61 (50 – 73) | 60 (50 – 71) | 0.38 |
| Unknown | 13 | 11 | 2 |  |
| v0\_tcd3\_cd8\_p | 24 (18 – 31) | 24 (18 – 31) | 23 (17 – 30) | 0.031 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd3\_cd8 | 294 (185 – 430) | 298 (190 – 440) | 260 (167 – 399) | 0.048 |
| Unknown | 12 | 10 | 2 |  |
| v0\_tcd3\_cd8\_cd16\_p | 1.00 (0.00 – 1.00) | 1.00 (0.00 – 1.00) | 1.00 (0.00 – 1.00) | 0.58 |
| Unknown | 42 | 34 | 8 |  |
| v0\_tcd3\_cd8\_cd16 | 5 (0 – 16) | 4 (0 – 17) | 8 (0 – 14) | 0.62 |
| Unknown | 88 | 75 | 13 |  |
| v0\_tcd3\_cd8m\_cd16\_p | 1.00 (0.00 – 2.00) | 1.00 (0.00 – 2.00) | 1.00 (1.00 – 2.00) | 0.33 |
| Unknown | 44 | 36 | 8 |  |
| v0\_tcd3\_cd8m\_cd16 | 12 (0 – 22) | 11 (0 – 22) | 13 (2 – 22) | 0.31 |
| Unknown | 88 | 75 | 13 |  |
| v0\_r\_cd4\_cd8 | 2.00 (1.41 – 2.94) | 1.99 (1.38 – 2.90) | 2.08 (1.49 – 3.21) | 0.10 |
| Unknown | 5 | 4 | 1 |  |
| v0\_bcd19\_p | 8.0 (5.0 – 11.0) | 8.0 (5.0 – 11.0) | 8.0 (5.0 – 12.0) | 0.30 |
| Unknown | 12 | 10 | 2 |  |
| v0\_bcd19 | 96 (55 – 152) | 94 (55 – 153) | 101 (56 – 143) | 0.83 |
| Unknown | 12 | 10 | 2 |  |
| v0\_nk\_cd56\_cd3\_p | 12 (8 – 18) | 12 (8 – 17) | 13 (8 – 19) | 0.25 |
| Unknown | 12 | 10 | 2 |  |
| v0\_nk\_cd56\_cd3 | 139 (91 – 221) | 138 (90 – 223) | 147 (97 – 210) | 0.54 |
| Unknown | 12 | 10 | 2 |  |
| v0\_monocytestotaux\_p | 7.00 (5.00 – 8.00) | 7.00 (5.00 – 8.00) | 7.00 (5.00 – 8.00) | 0.93 |
| Unknown | 174 | 148 | 26 |  |
| v0\_monocytestotaux | 387 (282 – 515) | 386 (281 – 516) | 390 (299 – 510) | 0.81 |
| Unknown | 174 | 148 | 26 |  |
| v0\_monocytesInflam\_p | 0.70 (0.40 – 1.13) | 0.69 (0.39 – 1.11) | 0.81 (0.48 – 1.28) | 0.15 |
| Unknown | 174 | 148 | 26 |  |
| v0\_monocytesInflam | 41 (23 – 65) | 40 (23 – 64) | 46 (27 – 73) | 0.084 |
| Unknown | 174 | 148 | 26 |  |
| v1\_Raigu | 190 (18) | 141 (16) | 49 (38) | <0.001 |
| Unknown | 67 | 60 | 7 |  |
| v1\_tcd3\_p | 81 (73 – 87) | 81 (73 – 87) | 80 (74 – 87) | 0.94 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3 | 850 (542 – 1,198) | 854 (544 – 1,189) | 798 (512 – 1,296) | 0.98 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd4\_p | 44 (32 – 53) | 44 (32 – 53) | 45 (32 – 54) | 0.76 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd4 | 445 (253 – 698) | 445 (252 – 698) | 444 (282 – 659) | 0.96 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd4\_cd45ra\_p | 35 (22 – 47) | 35 (22 – 47) | 31 (22 – 46) | 0.53 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd4\_cd45ra\_cd31\_p | 21 (12 – 31) | 21 (12 – 31) | 18 (11 – 30) | 0.26 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd4\_cd45ro\_p | 65 (53 – 77) | 65 (53 – 77) | 70 (53 – 78) | 0.49 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8\_p | 31 (23 – 41) | 31 (23 – 41) | 27 (22 – 40) | 0.33 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8 | 311 (195 – 486) | 312 (199 – 487) | 291 (173 – 462) | 0.53 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8\_cd16\_p | 1.00 (0.00 – 1.00) | 1.00 (0.00 – 1.00) | 1.00 (0.00 – 1.00) | >0.99 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8\_cd16 | 5 (0 – 15) | 5 (0 – 15) | 5 (0 – 15) | 0.95 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8m\_cd16\_p | 1.00 (0.00 – 2.00) | 1.00 (0.00 – 2.00) | 1.00 (0.00 – 1.00) | 0.46 |
| Unknown | 197 | 127 | 70 |  |
| v1\_tcd3\_cd8m\_cd16 | 8 (0 – 17) | 9 (0 – 18) | 7 (0 – 15) | 0.32 |
| Unknown | 198 | 128 | 70 |  |
| v1\_r\_cd4\_cd8 | 1.29 (0.73 – 2.04) | 1.32 (0.78 – 2.05) | 0.81 (0.00 – 1.91) | <0.001 |
| Unknown | 112 | 80 | 32 |  |
| v1\_bcd19\_p | 7 (4 – 11) | 7 (4 – 11) | 6 (4 – 13) | 0.77 |
| Unknown | 197 | 127 | 70 |  |
| v1\_bcd19 | 72 (40 – 122) | 72 (40 – 124) | 70 (38 – 104) | 0.76 |
| Unknown | 197 | 127 | 70 |  |
| v1\_nk\_cd56\_cd3\_p | 9 (5 – 16) | 9 (5 – 16) | 10 (4 – 15) | 0.82 |
| Unknown | 197 | 127 | 70 |  |
| v1\_nk\_cd56\_cd3 | 92 (54 – 153) | 92 (53 – 152) | 93 (56 – 168) | 0.94 |
| Unknown | 197 | 127 | 70 |  |
| v1\_monocytestotaux\_p | 8.0 (6.0 – 10.0) | 8.0 (6.0 – 10.0) | 8.0 (7.0 – 10.0) | 0.69 |
| Unknown | 224 | 151 | 73 |  |
| v1\_monocytestotaux | 454 (333 – 615) | 453 (331 – 616) | 460 (346 – 609) | 0.96 |
| Unknown | 224 | 151 | 73 |  |
| v1\_monocytesInflam\_p | 0.60 (0.33 – 0.99) | 0.60 (0.33 – 0.98) | 0.63 (0.34 – 1.11) | 0.72 |
| Unknown | 224 | 151 | 73 |  |
| v1\_monocytesInflam | 32 (19 – 53) | 32 (19 – 52) | 34 (18 – 64) | 0.53 |
| Unknown | 224 | 151 | 73 |  |
| v3\_Raigu | 62 (7.9) | 41 (5.7) | 21 (32) | <0.001 |
| Unknown | 315 | 244 | 71 |  |
| raison |  |  |  | <0.001 |
| Décès | 92 (40) | 92 (100) | 0 (0) |  |
| Retour en dialyse | 136 (60) | 0 (0) | 136 (100) |  |
| Unknown | 874 | 874 | 0 |  |
| delai\_v1 | 365 (348 – 389) | 366 (351 – 390) | 349 (9 – 367) | <0.001 |
| Unknown | 61 | 57 | 4 |  |
| delai\_v1\_RAigu | 79 (14 – 153) | 79 (16 – 157) | 80 (10 – 130) | 0.28 |
| Unknown | 915 | 827 | 88 |  |
| delai\_v3 | 1,095 (1,039 – 1,121) | 1,096 (1,049 – 1,123) | 1,002 (775 – 1,094) | <0.001 |
| Unknown | 313 | 242 | 71 |  |
| delai\_v3\_RAigu | 535 (392 – 863) | 530 (385 – 828) | 658 (402 – 895) | 0.45 |
| Unknown | 1,040 | 925 | 115 |  |
| delai\_sortie | 492 (42 – 1,104) | 654 (120 – 1,387) | 265 (3 – 985) | <0.001 |
| Unknown | 873 | 873 | 0 |  |
| loss3y | 109 (9.9) | 0 (0) | 109 (80) | <0.001 |
| a\_reject1y | 190 (17) | 141 (15) | 49 (36) | <0.001 |
| a\_reject3y | 227 (21) | 165 (17) | 62 (46) | <0.001 |
| 1Median (IQR); n (%) | | | | |
| 2Wilcoxon rank sum test; Pearson's Chi-squared test; Fisher's exact test | | | | |

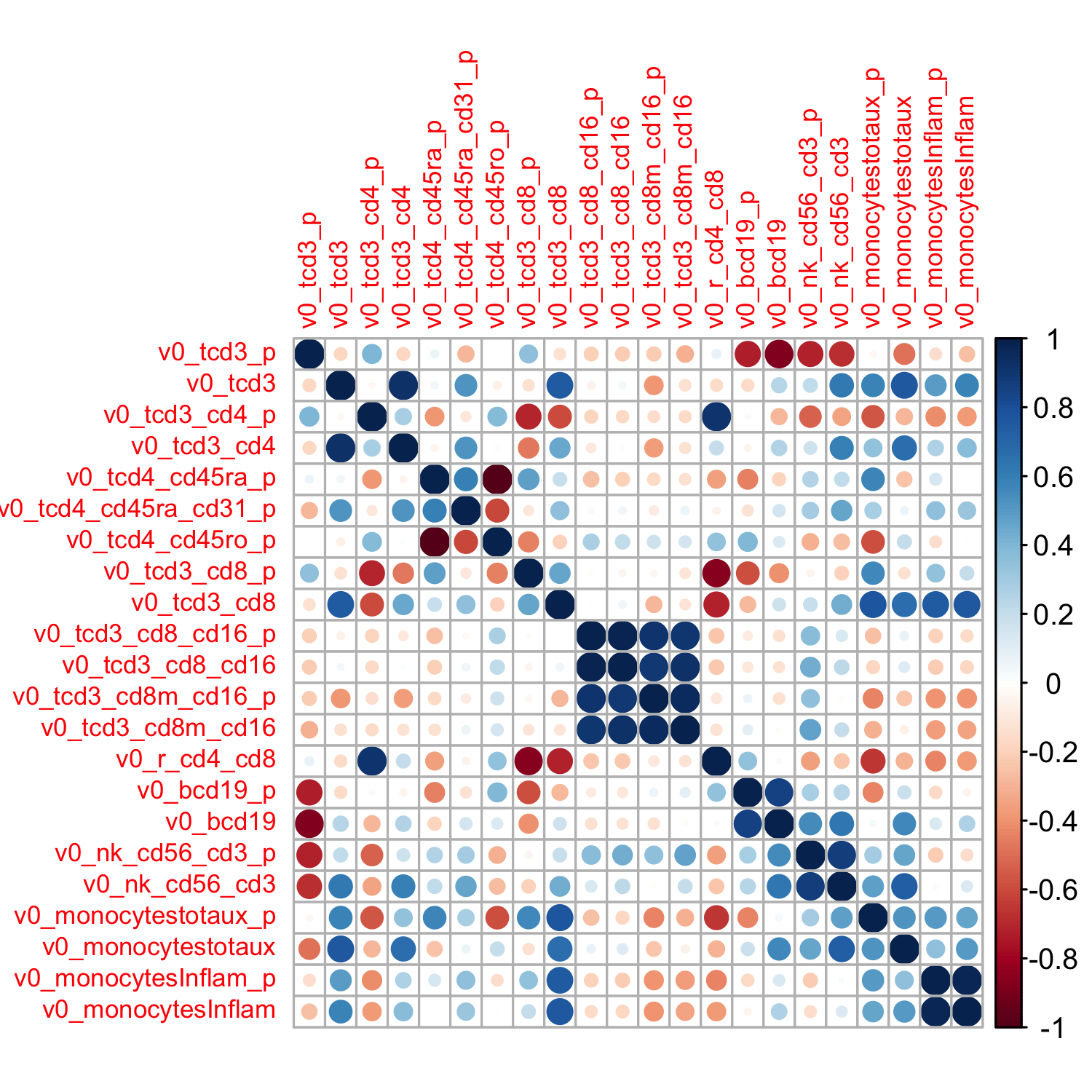
# Correlation matrices

## Immune profile

### Real data



### Fake data



## Full correlation matrix by outcome

ggp <- orly\_fake |> select(all\_of(quantiv0)) |> ggpairs(progress = FALSE)  
print(ggp, progress = F)

