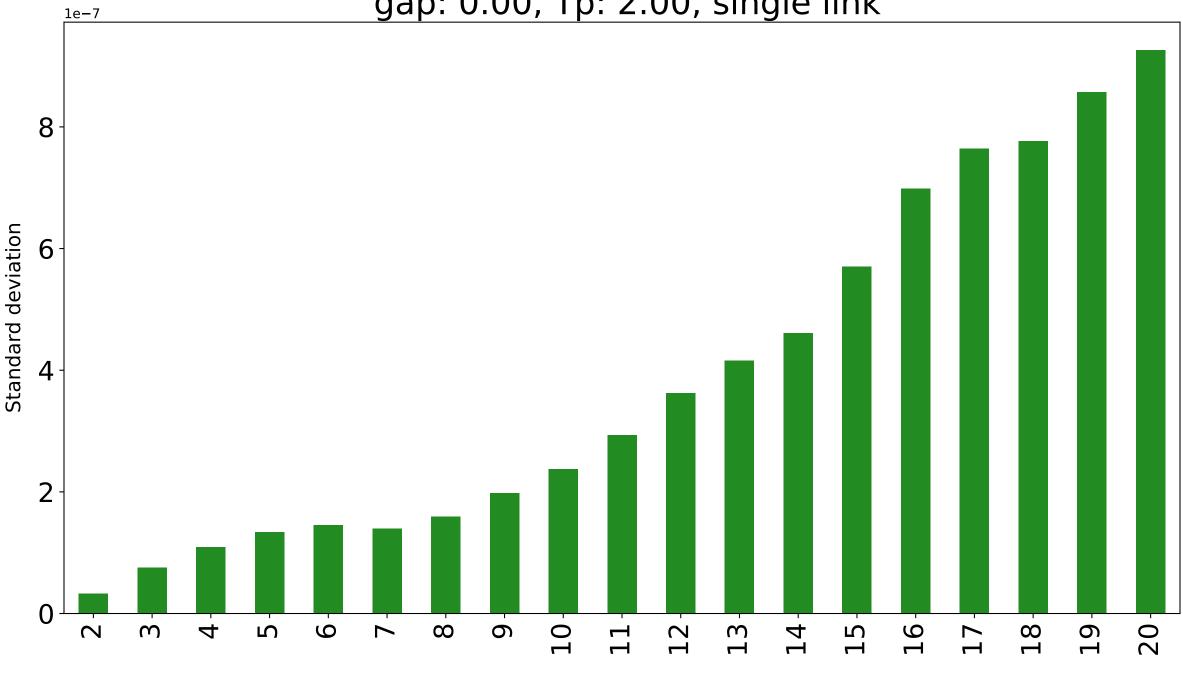


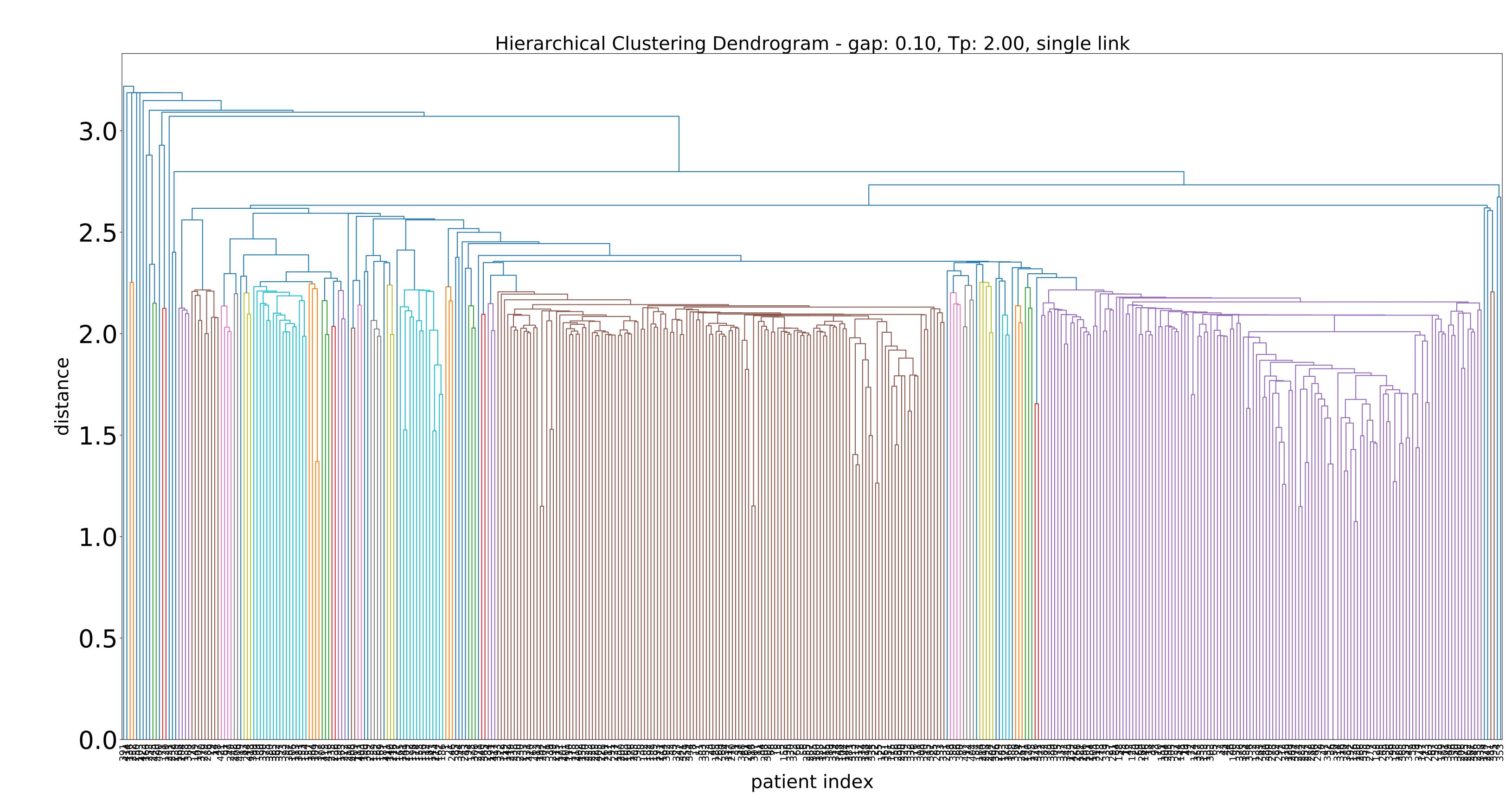
Average values of five clustering indices gap: 0.00, Tp: 2.00, single link

| L . | I AD | ГΜ | - | | VD | - 11 | F | 1// | V | Dh: | DT | CC | CVAIN | S | Dunn |
|------|------|---------|---------|---------|---------|---------|----------|----------|---------|---------|---------|---------|-------|---------|---------|
| k | AR | FM | J | AW | VD | Н | <u> </u> | VI | К | Phi | RT | SS | CVNN | | Dunn |
| 2.0 | 1.0 | 0.99922 | 0.99844 | 0.768 | 0.00039 | 0.768 | 0.99922 | 0.00015 | 0.99922 | 0.00484 | 0.99691 | 0.99691 | 2.0 | 0.52713 | 0.77936 |
| 3.0 | 1.0 | 0.99806 | 0.99614 | 0.75755 | 0.00097 | 0.82861 | 0.99805 | -0.01514 | 0.99807 | 0.00292 | 0.99244 | 0.99241 | 2.0 | 0.67908 | 0.77208 |
| 4.0 | 1.0 | 0.996 | 0.99204 | 0.70907 | 0.00199 | 0.80799 | 0.99598 | -0.04273 | 0.99602 | 0.00191 | 0.98456 | 0.98442 | 2.0 | 0.75662 | 0.77208 |
| 5.0 | 1.0 | 0.99219 | 0.98449 | 0.61561 | 0.00388 | 0.74012 | 0.99214 | -0.07346 | 0.99223 | 0.00126 | 0.97019 | 0.96976 | 2.0 | 0.80379 | 0.77208 |
| 6.0 | 1.0 | 0.99208 | 0.98432 | 0.76548 | 0.00417 | 0.81336 | 0.99205 | -0.23434 | 0.9921 | 0.00085 | 0.97031 | 0.96948 | 2.0 | 0.69984 | 0.77208 |
| 7.0 | 1.0 | 0.99191 | 0.98398 | 0.79583 | 0.0043 | 0.84441 | 0.99188 | -0.37558 | 0.99194 | 0.00071 | 0.96994 | 0.96878 | 2.0 | 0.64845 | 0.77208 |
| 8.0 | 1.0 | 0.99008 | 0.98037 | 0.75838 | 0.00531 | 0.83909 | 0.99003 | -0.47912 | 0.99013 | 0.00063 | 0.96355 | 0.96188 | 2.0 | 0.68548 | 0.77208 |
| 9.0 | 1.0 | 0.99155 | 0.98332 | 0.83845 | 0.00498 | 0.88648 | 0.99151 | -0.7418 | 0.9916 | 0.00056 | 0.96951 | 0.96777 | 2.0 | 0.62524 | 0.77208 |
| 10.0 | 1.0 | 0.98907 | 0.97839 | 0.77807 | 0.00593 | 0.86828 | 0.98897 | -0.88961 | 0.98917 | 0.00052 | 0.96086 | 0.95848 | 2.0 | 0.65738 | 0.74753 |
| 11.0 | 1.0 | 0.98558 | 0.97156 | 0.73938 | 0.00773 | 0.84743 | 0.98541 | -1.07066 | 0.98576 | 0.00046 | 0.94918 | 0.94583 | 2.0 | 0.68855 | 0.74558 |
| 12.0 | 1.0 | 0.97991 | 0.96048 | 0.66267 | 0.0099 | 0.80426 | 0.9796 | -1.18143 | 0.98023 | 0.00042 | 0.93014 | 0.9255 | 2.0 | 0.71627 | 0.7359 |
| 13.0 | 1.0 | 0.97609 | 0.95308 | 0.64988 | 0.01167 | 0.79492 | 0.97567 | -1.45584 | 0.97652 | 0.00037 | 0.91841 | 0.91223 | 2.0 | 0.66924 | 0.72901 |
| 14.0 | 1.0 | 0.97311 | 0.94753 | 0.68221 | 0.01397 | 0.79422 | 0.97271 | -1.84278 | 0.97351 | 0.00032 | 0.91052 | 0.90243 | 2.0 | 0.62849 | 0.69121 |
| 15.0 | 1.0 | 0.96776 | 0.93718 | 0.63011 | 0.01647 | 0.77499 | 0.96707 | -2.03008 | 0.96846 | 0.0003 | 0.89439 | 0.88466 | 2.0 | 0.65233 | 0.68826 |
| 16.0 | 1.0 | 0.96004 | 0.92243 | 0.57212 | 0.01972 | 0.74205 | 0.95895 | -2.23413 | 0.96113 | 0.00028 | 0.87151 | 0.85963 | 2.0 | 0.67726 | 0.68525 |
| 17.0 | 1.0 | 0.95495 | 0.91309 | 0.58431 | 0.02183 | 0.73548 | 0.95381 | -2.76377 | 0.95609 | 0.00024 | 0.85905 | 0.84389 | 2.0 | 0.65009 | 0.67875 |
| 18.0 | 1.0 | 0.95308 | 0.90959 | 0.60756 | 0.0227 | 0.74962 | 0.9519 | -3.42738 | 0.95426 | 0.00022 | 0.85611 | 0.83794 | 2.0 | 0.62683 | 0.6748 |
| 19.0 | 1.0 | 0.9465 | 0.89708 | 0.57317 | 0.02587 | 0.73643 | 0.9449 | -3.84397 | 0.94812 | 0.00021 | 0.83887 | 0.81741 | 2.0 | 0.64499 | 0.65927 |
| 20.0 | 1.0 | 0.93847 | 0.88269 | 0.56667 | 0.0293 | 0.71715 | 0.93678 | -4.41706 | 0.94017 | 0.00019 | 0.82038 | 0.79413 | 2.0 | 0.62342 | 0.6482 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.00, Tp: 2.00, single link



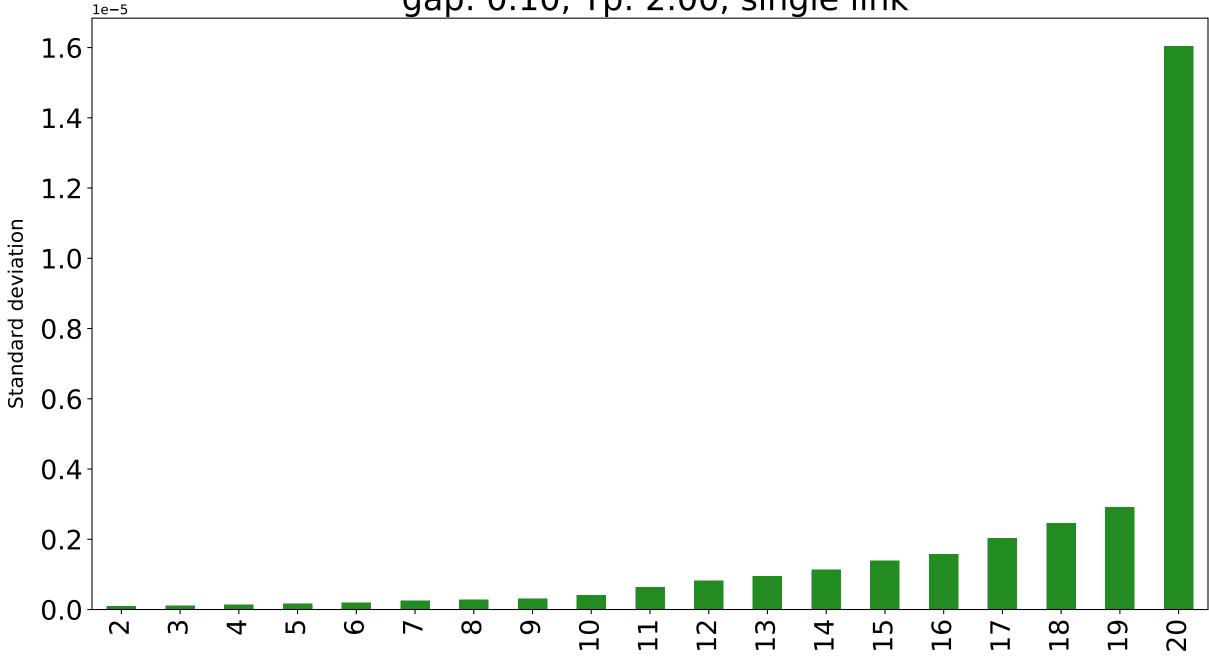
Number of clusters

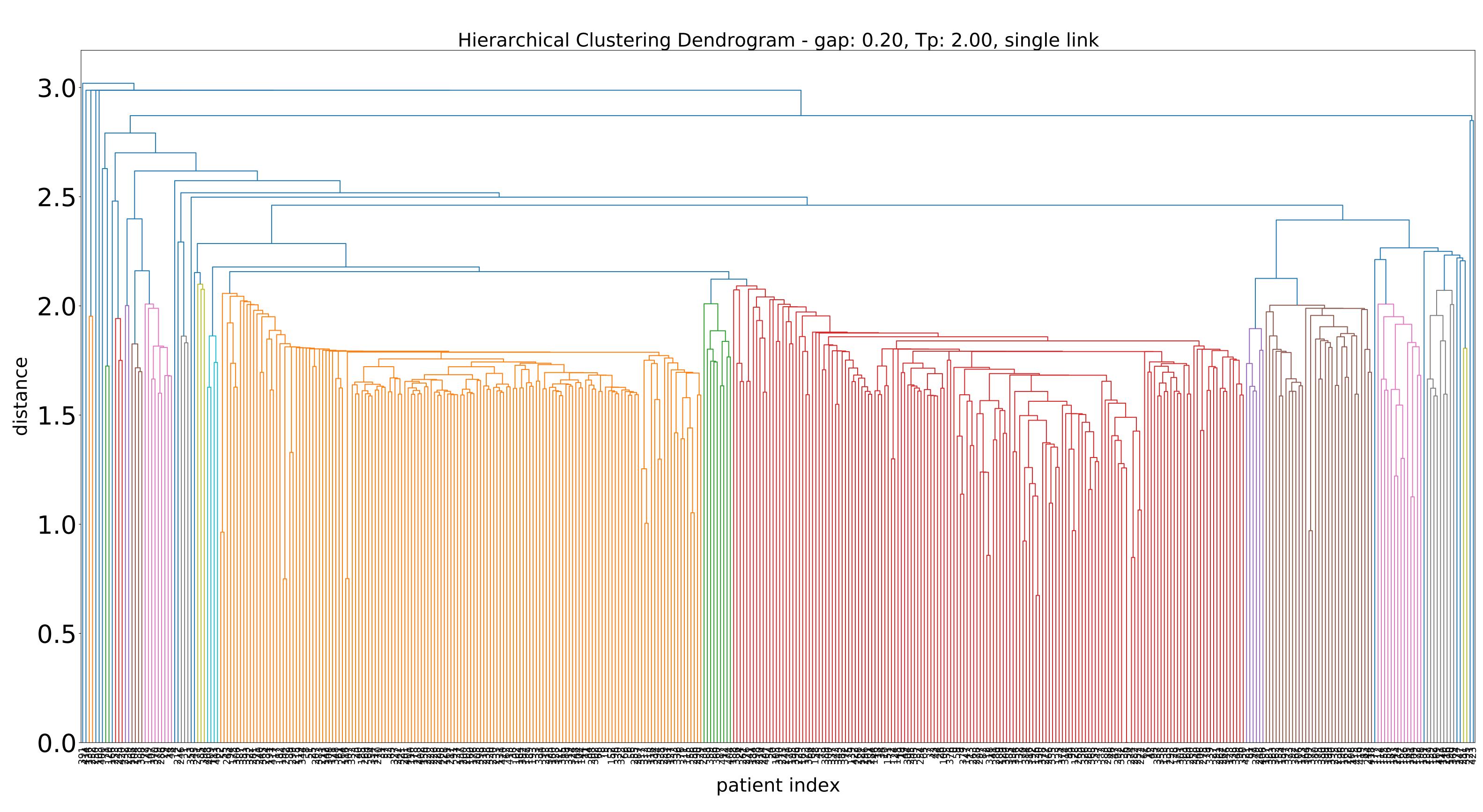


Average values of five clustering indices gap: 0.10, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|-----|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99741 | 0.99485 | 0.53544 | 0.0013 | 0.53544 | 0.9974 | 0.0056 | 0.99742 | 0.00337 | 0.98989 | 0.98989 | 2.0 | 0.52264 | 0.60958 |
| 3.0 | 1.0 | 0.9946 | 0.98928 | 0.50964 | 0.00271 | 0.59334 | 0.99458 | -0.00237 | 0.99462 | 0.00206 | 0.97908 | 0.97899 | 2.0 | 0.67535 | 0.60353 |
| 4.0 | 1.0 | 0.99462 | 0.98934 | 0.70482 | 0.00267 | 0.78035 | 0.9946 | -0.0533 | 0.99465 | 0.00157 | 0.97949 | 0.97922 | 2.0 | 0.62647 | 0.60353 |
| 5.0 | 1.0 | 0.99367 | 0.98747 | 0.70994 | 0.00314 | 0.81107 | 0.99364 | -0.11633 | 0.99371 | 0.00125 | 0.97611 | 0.97567 | 2.0 | 0.6994 | 0.60353 |
| 6.0 | 1.0 | 0.99046 | 0.98113 | 0.6548 | 0.00472 | 0.77644 | 0.99039 | -0.16785 | 0.99053 | 0.00096 | 0.96438 | 0.96355 | 2.0 | 0.73951 | 0.60353 |
| 7.0 | 1.0 | 0.98704 | 0.9744 | 0.61341 | 0.00659 | 0.7614 | 0.9869 | -0.26521 | 0.98718 | 0.00076 | 0.9523 | 0.95094 | 2.0 | 0.77485 | 0.59619 |
| 8.0 | 1.0 | 0.98626 | 0.97298 | 0.70613 | 0.00699 | 0.80011 | 0.98615 | -0.47968 | 0.98637 | 0.00058 | 0.95056 | 0.94843 | 2.0 | 0.69847 | 0.58713 |
| 9.0 | 1.0 | 0.98758 | 0.97558 | 0.77995 | 0.00655 | 0.85616 | 0.98745 | -0.76036 | 0.98771 | 0.00052 | 0.95614 | 0.95361 | 2.0 | 0.64259 | 0.58535 |
| 10.0 | 1.0 | 0.98303 | 0.9667 | 0.73281 | 0.00924 | 0.83605 | 0.98276 | -0.96581 | 0.9833 | 0.00046 | 0.94136 | 0.93757 | 2.0 | 0.67792 | 0.58152 |
| 11.0 | 1.0 | 0.97473 | 0.95072 | 0.63854 | 0.01348 | 0.78363 | 0.97413 | -1.07446 | 0.97534 | 0.0004 | 0.91496 | 0.90943 | 2.0 | 0.70454 | 0.55454 |
| 12.0 | 1.0 | 0.96517 | 0.93247 | 0.55439 | 0.01748 | 0.73006 | 0.96412 | -1.16193 | 0.96623 | 0.00036 | 0.88562 | 0.8782 | 2.0 | 0.72815 | 0.54527 |
| 13.0 | 1.0 | 0.95949 | 0.92179 | 0.54232 | 0.0205 | 0.7157 | 0.95817 | -1.39338 | 0.96082 | 0.00031 | 0.8698 | 0.86033 | 2.0 | 0.68587 | 0.52988 |
| 14.0 | 1.0 | 0.94967 | 0.90372 | 0.51419 | 0.02516 | 0.68243 | 0.94789 | -1.61328 | 0.95147 | 0.00027 | 0.84346 | 0.83124 | 2.0 | 0.65094 | 0.51754 |
| 15.0 | 1.0 | 0.93873 | 0.88351 | 0.46171 | 0.03074 | 0.6534 | 0.93601 | -1.79128 | 0.94148 | 0.00025 | 0.81478 | 0.80026 | 2.0 | 0.72759 | 0.50618 |
| 16.0 | 1.0 | 0.92311 | 0.85552 | 0.43998 | 0.03923 | 0.61863 | 0.9196 | -2.17749 | 0.92665 | 0.0002 | 0.77766 | 0.75744 | 2.0 | 0.69208 | 0.49848 |
| 17.0 | 1.0 | 0.9057 | 0.82408 | 0.37789 | 0.04823 | 0.58172 | 0.90033 | -2.38235 | 0.91115 | 0.00018 | 0.73598 | 0.7118 | 2.0 | 0.70739 | 0.49603 |
| 18.0 | 1.0 | 0.8978 | 0.81344 | 0.45988 | 0.05196 | 0.60727 | 0.8932 | -3.69852 | 0.90248 | 0.00015 | 0.73361 | 0.69888 | 2.0 | 0.67713 | 0.49566 |
| 19.0 | 1.0 | 0.884 | 0.78807 | 0.40739 | 0.0586 | 0.58539 | 0.87773 | -4.14572 | 0.89039 | 0.00014 | 0.70226 | 0.66187 | 2.0 | 0.69645 | 0.49353 |
| 20.0 | 1.0 | 0.91085 | 0.83755 | 0.69182 | 0.04969 | 0.73345 | 0.90836 | -7.52836 | 0.9134 | 0.00013 | 0.78992 | 0.73141 | 2.0 | 0.66701 | 0.49104 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.10, Tp: 2.00, single link

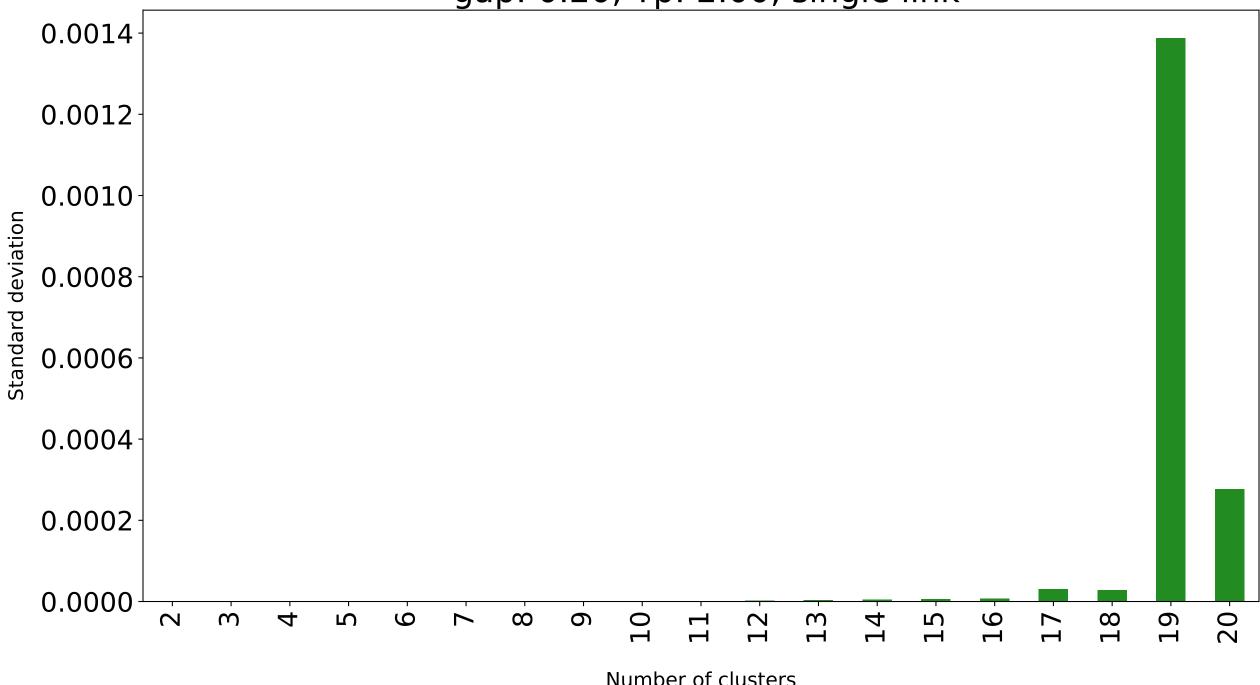


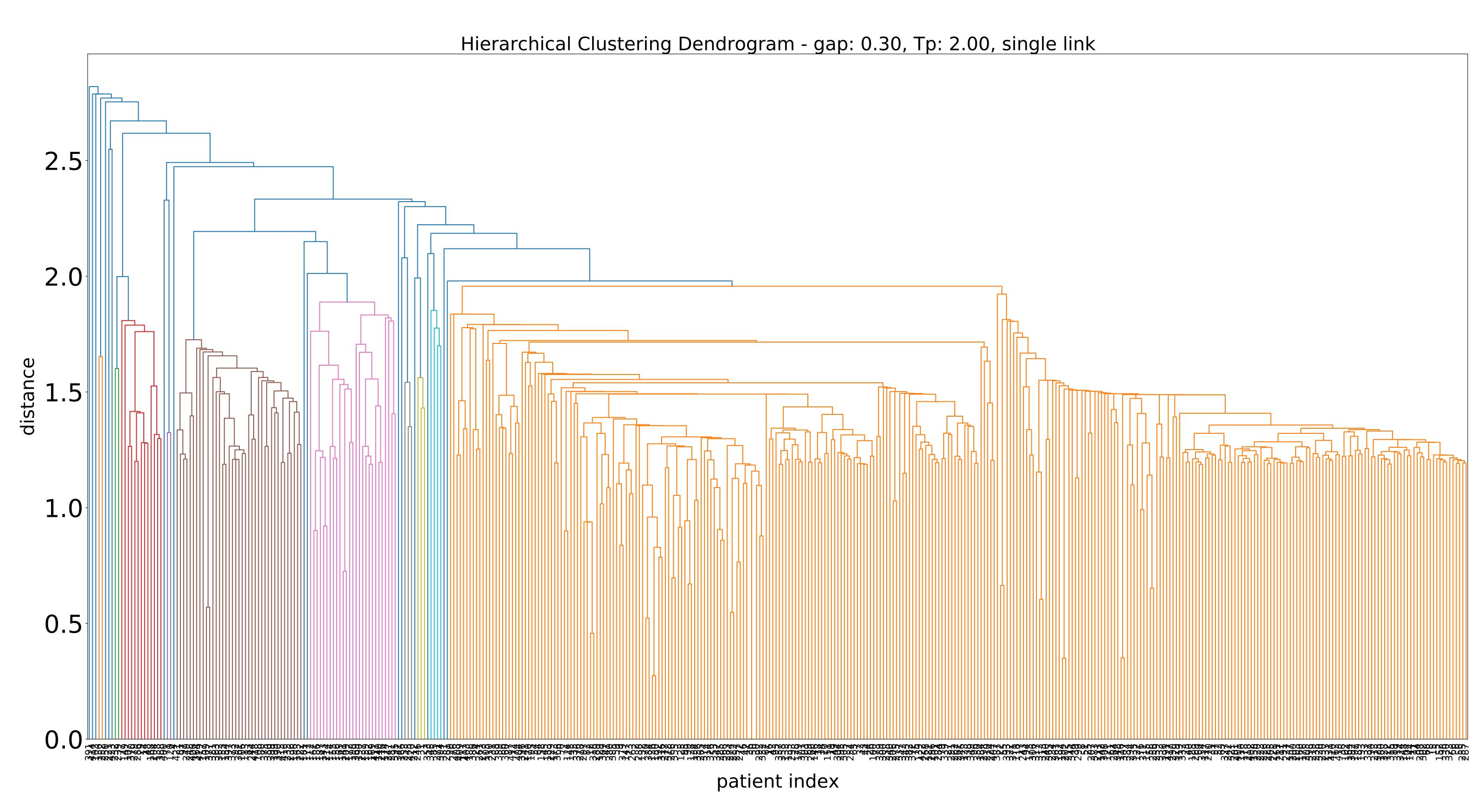


Average values of five clustering indices gap: 0.20, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99784 | 0.9957 | 0.60748 | 0.00108 | 0.60748 | 0.99783 | 0.00431 | 0.99784 | 0.00383 | 0.99154 | 0.99154 | 2.0 | 0.51823 | 0.48848 |
| 3.0 | 1.0 | 0.99501 | 0.99009 | 0.56077 | 0.00249 | 0.64589 | 0.99499 | -0.00532 | 0.99502 | 0.00224 | 0.9807 | 0.9806 | 2.0 | 0.6709 | 0.48331 |
| 4.0 | 1.0 | 0.99459 | 0.98929 | 0.7221 | 0.0027 | 0.78963 | 0.99456 | -0.05428 | 0.99462 | 0.00156 | 0.97948 | 0.97922 | 2.0 | 0.63635 | 0.48331 |
| 5.0 | 1.0 | 0.99311 | 0.98639 | 0.7219 | 0.00343 | 0.81561 | 0.99305 | -0.11825 | 0.99318 | 0.00123 | 0.9743 | 0.97384 | 2.0 | 0.70723 | 0.48331 |
| 6.0 | 1.0 | 0.98919 | 0.97868 | 0.65482 | 0.00537 | 0.77739 | 0.98906 | -0.17018 | 0.98932 | 0.00094 | 0.96024 | 0.95932 | 2.0 | 0.74536 | 0.48331 |
| 7.0 | 1.0 | 0.98501 | 0.97057 | 0.66149 | 0.00781 | 0.78042 | 0.98478 | -0.29792 | 0.98524 | 0.00072 | 0.94633 | 0.94468 | 2.0 | 0.66431 | 0.4645 |
| 8.0 | 1.0 | 0.97697 | 0.9549 | 0.53137 | 0.01166 | 0.70547 | 0.9765 | -0.35719 | 0.97744 | 0.00058 | 0.9189 | 0.91625 | 2.0 | 0.80748 | 0.46086 |
| 9.0 | 1.0 | 0.97293 | 0.94728 | 0.56274 | 0.01364 | 0.72179 | 0.97234 | -0.60813 | 0.97352 | 0.00046 | 0.90736 | 0.90316 | 2.0 | 0.74717 | 0.4516 |
| 10.0 | 1.0 | 0.96513 | 0.93284 | 0.58 | 0.01768 | 0.70861 | 0.9643 | -0.87836 | 0.96598 | 0.00036 | 0.88577 | 0.87916 | 2.0 | 0.69667 | 0.43695 |
| 11.0 | 1.0 | 0.9537 | 0.91106 | 0.48926 | 0.02356 | 0.67281 | 0.95202 | -1.02384 | 0.95538 | 0.00031 | 0.85249 | 0.84327 | 2.0 | 0.7225 | 0.42528 |
| 12.0 | 1.0 | 0.9513 | 0.9078 | 0.67539 | 0.02448 | 0.74753 | 0.94938 | -2.11903 | 0.95323 | 0.00023 | 0.85763 | 0.84154 | 2.0 | 0.67459 | 0.4235 |
| 13.0 | 1.0 | 0.93827 | 0.88538 | 0.62456 | 0.03204 | 0.74417 | 0.93462 | -2.46769 | 0.94207 | 0.00022 | 0.83226 | 0.81167 | 2.0 | 0.69945 | 0.41631 |
| 14.0 | 1.0 | 0.91718 | 0.84806 | 0.57422 | 0.04264 | 0.70311 | 0.9119 | -2.95416 | 0.92265 | 0.00018 | 0.78651 | 0.75714 | 2.0 | 0.67073 | 0.40735 |
| 15.0 | 1.0 | 0.89461 | 0.80854 | 0.5057 | 0.05547 | 0.66971 | 0.88624 | -3.46614 | 0.9034 | 0.00017 | 0.74058 | 0.70287 | 2.0 | 0.69252 | 0.4041 |
| 16.0 | 0.99999 | 0.86108 | 0.75009 | 0.40217 | 0.07362 | 0.60276 | 0.84822 | -3.80567 | 0.87467 | 0.00014 | 0.67063 | 0.62276 | 2.0 | 0.70845 | 0.40118 |
| 17.0 | 1.0 | 0.92287 | 0.86182 | 0.83214 | 0.05889 | 0.82567 | 0.91752 | -7.89604 | 0.92844 | 0.00014 | 0.84459 | 0.78534 | 2.0 | 0.6638 | 0.39813 |
| 18.0 | 1.0 | 0.91961 | 0.85677 | 0.79395 | 0.06491 | 0.83977 | 0.91248 | -8.97368 | 0.92714 | 0.00014 | 0.84992 | 0.78229 | 2.0 | 0.64321 | 0.38803 |
| 19.0 | 1.00009 | 0.91284 | 0.84786 | 0.77507 | 0.06118 | 0.84589 | 0.90391 | -10.63712 | 0.92228 | 0.00014 | 0.85231 | 0.77804 | 2.0 | 0.62745 | 0.3872 |
| 20.0 | 1.00002 | 0.88315 | 0.79736 | 0.69446 | 0.07738 | 0.80368 | 0.86958 | -11.51289 | 0.89759 | 0.00013 | 0.80905 | 0.71213 | 2.0 | 0.64284 | 0.37089 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.20, Tp: 2.00, single link

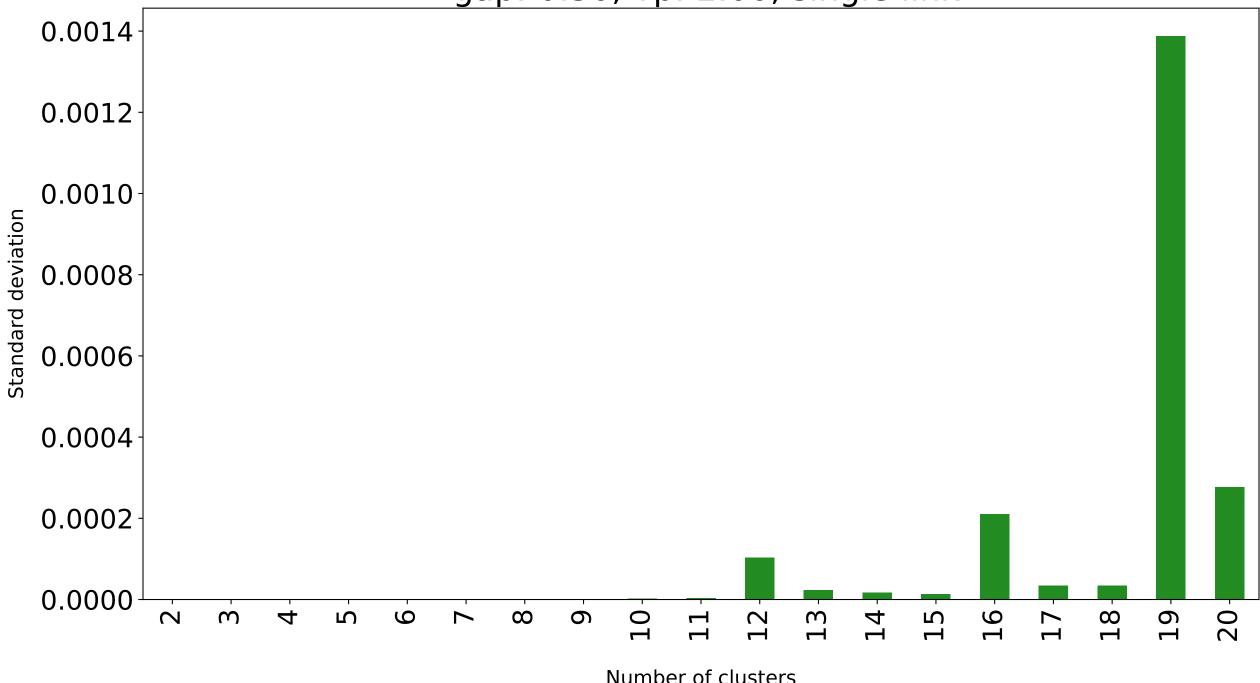


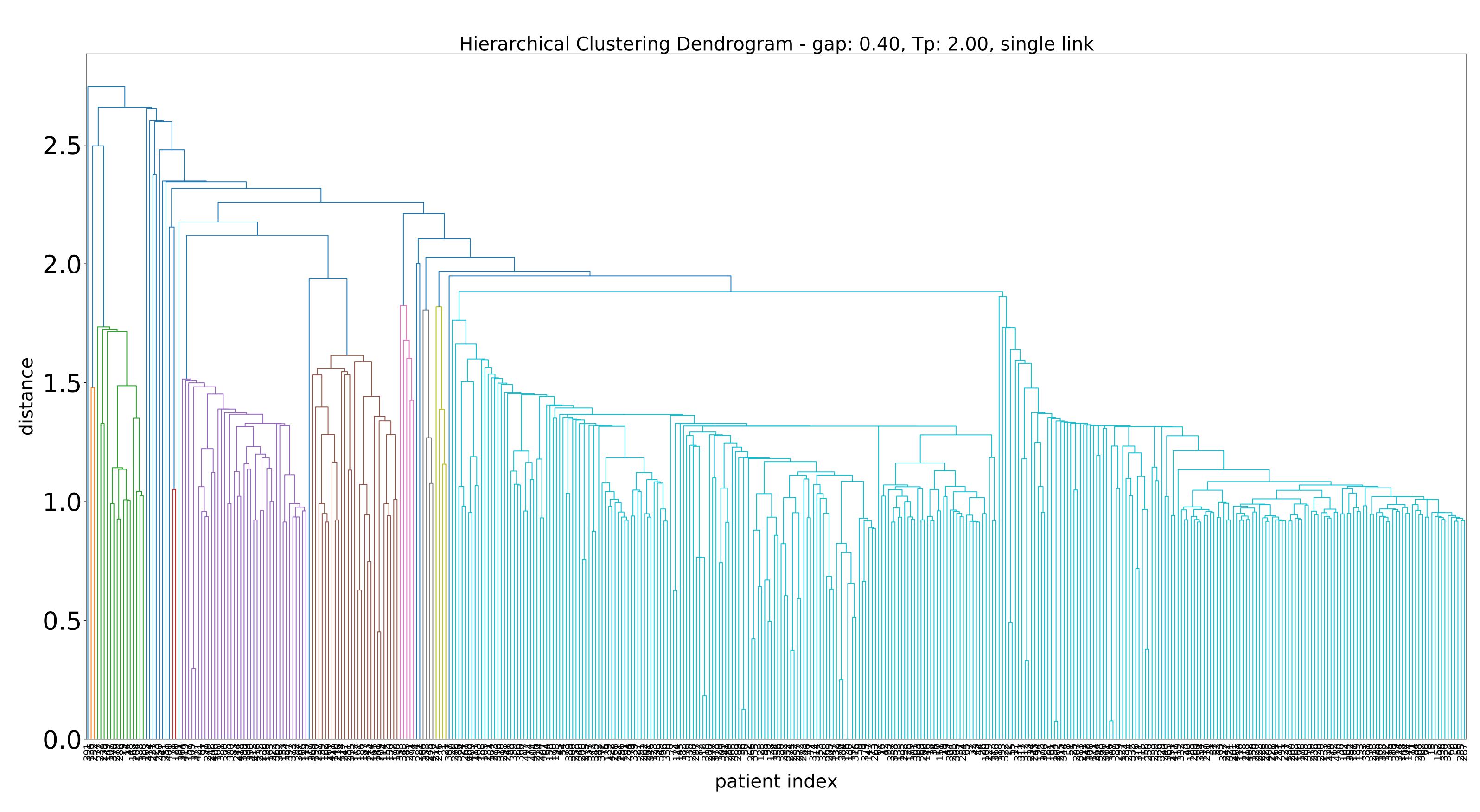


Average values of five clustering indices gap: 0.30, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99721 | 0.99446 | 0.52731 | 0.0014 | 0.52731 | 0.9972 | 0.00614 | 0.99722 | 0.00332 | 0.98914 | 0.98914 | 2.0 | 0.51309 | 0.40922 |
| 3.0 | 1.0 | 0.99315 | 0.98646 | 0.5222 | 0.00344 | 0.60116 | 0.99309 | -0.00114 | 0.99321 | 0.00208 | 0.97405 | 0.97393 | 2.0 | 0.66638 | 0.40458 |
| 4.0 | 1.0 | 0.98783 | 0.97604 | 0.46271 | 0.00611 | 0.57592 | 0.9877 | -0.00497 | 0.98795 | 0.00134 | 0.95476 | 0.95439 | 2.0 | 0.73272 | 0.40458 |
| 5.0 | 1.0 | 0.98592 | 0.9723 | 0.5781 | 0.00719 | 0.69635 | 0.98573 | -0.07509 | 0.98611 | 0.00103 | 0.94851 | 0.94762 | 2.0 | 0.70415 | 0.40204 |
| 6.0 | 1.0 | 0.98038 | 0.9615 | 0.5386 | 0.00984 | 0.68611 | 0.98004 | -0.14658 | 0.98072 | 0.00079 | 0.92957 | 0.92803 | 2.0 | 0.75216 | 0.39965 |
| 7.0 | 1.0 | 0.97166 | 0.94465 | 0.48409 | 0.0143 | 0.65307 | 0.97108 | -0.26083 | 0.97224 | 0.00054 | 0.90088 | 0.89781 | 2.0 | 0.6771 | 0.3877 |
| 8.0 | 1.0 | 0.98136 | 0.96403 | 0.81311 | 0.00953 | 0.84406 | 0.98095 | -1.00143 | 0.98179 | 0.00035 | 0.93922 | 0.93457 | 2.0 | 0.61134 | 0.37995 |
| 9.0 | 1.0 | 0.97047 | 0.94375 | 0.72601 | 0.01499 | 0.82279 | 0.9692 | -1.25611 | 0.97175 | 0.00032 | 0.91058 | 0.90244 | 2.0 | 0.73908 | 0.36992 |
| 10.0 | 1.0 | 0.95373 | 0.91347 | 0.69142 | 0.02375 | 0.79898 | 0.95085 | -1.65493 | 0.95667 | 0.00028 | 0.87147 | 0.85813 | 2.0 | 0.70622 | 0.36161 |
| 11.0 | 1.0 | 0.92323 | 0.85816 | 0.56461 | 0.03992 | 0.71544 | 0.91755 | -1.81616 | 0.92905 | 0.00023 | 0.79692 | 0.7754 | 2.0 | 0.73256 | 0.35899 |
| 12.0 | 0.99999 | 0.91468 | 0.84804 | 0.83554 | 0.05184 | 0.74525 | 0.91049 | -3.9531 | 0.91895 | 0.00013 | 0.80361 | 0.76217 | 2.0 | 0.66891 | 0.33865 |
| 13.0 | 1.0 | 0.93331 | 0.87997 | 0.82367 | 0.04416 | 0.82348 | 0.92963 | -5.06939 | 0.93713 | 0.00014 | 0.85415 | 0.80872 | 2.0 | 0.69435 | 0.338 |
| 14.0 | 1.0 | 0.93731 | 0.88642 | 0.80928 | 0.04511 | 0.85138 | 0.93335 | -6.01049 | 0.94146 | 0.00014 | 0.86897 | 0.81749 | 2.0 | 0.7157 | 0.33707 |
| 15.0 | 1.0 | 0.94399 | 0.89835 | 0.82664 | 0.04546 | 0.8845 | 0.9396 | -7.17258 | 0.94864 | 0.00015 | 0.89055 | 0.83789 | 2.0 | 0.68917 | 0.33396 |
| 16.0 | 1.00002 | 0.94123 | 0.89402 | 0.82567 | 0.05099 | 0.88776 | 0.93635 | -7.9274 | 0.94639 | 0.00015 | 0.89118 | 0.83338 | 2.0 | 0.66893 | 0.32255 |
| 17.0 | 1.0 | 0.93635 | 0.88664 | 0.82384 | 0.04367 | 0.88472 | 0.93045 | -9.18291 | 0.94256 | 0.00014 | 0.8879 | 0.82742 | 2.0 | 0.65503 | 0.31835 |
| 18.0 | 1.00001 | 0.93118 | 0.8798 | 0.8293 | 0.04744 | 0.88518 | 0.92364 | -10.41349 | 0.93912 | 0.00014 | 0.88824 | 0.82724 | 2.0 | 0.62977 | 0.3172 |
| 19.0 | 1.00001 | 0.91053 | 0.84473 | 0.77517 | 0.05886 | 0.8547 | 0.89989 | -11.36572 | 0.92179 | 0.00014 | 0.85805 | 0.78165 | 2.0 | 0.64634 | 0.312 |
| 20.0 | 1.00001 | 0.88749 | 0.80553 | 0.72067 | 0.07211 | 0.82058 | 0.87353 | -12.36555 | 0.90228 | 0.00013 | 0.82457 | 0.73023 | 2.0 | 0.66365 | 0.30755 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.30, Tp: 2.00, single link

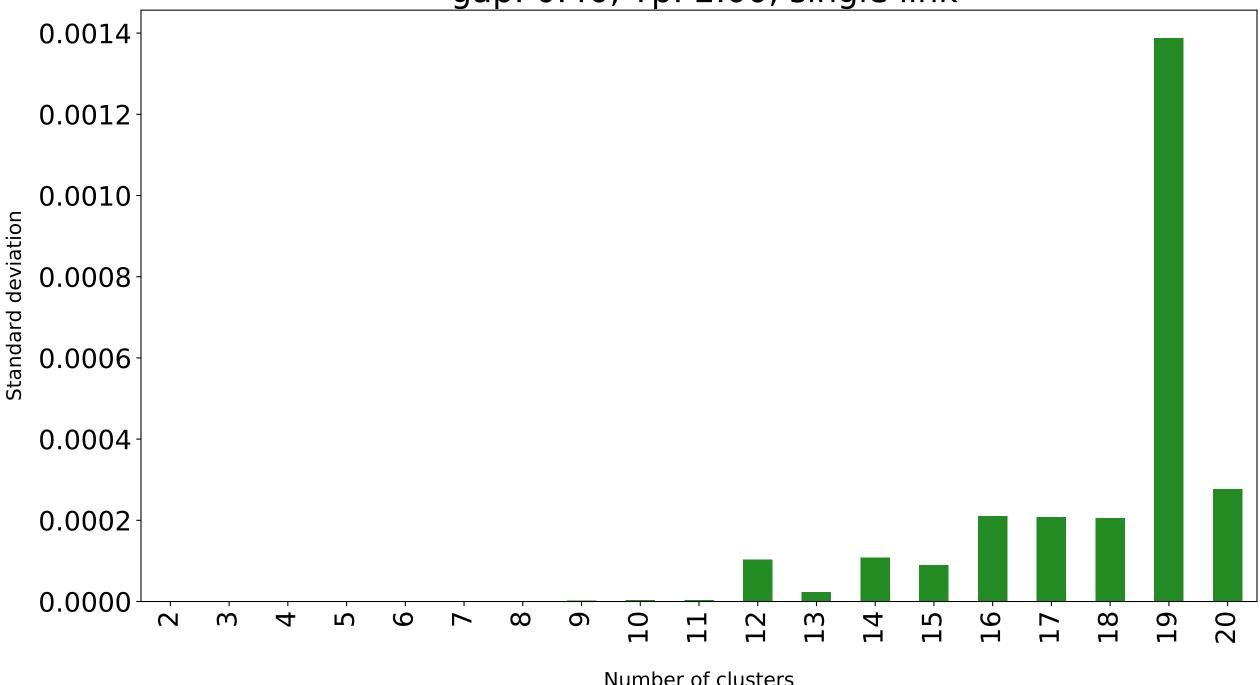


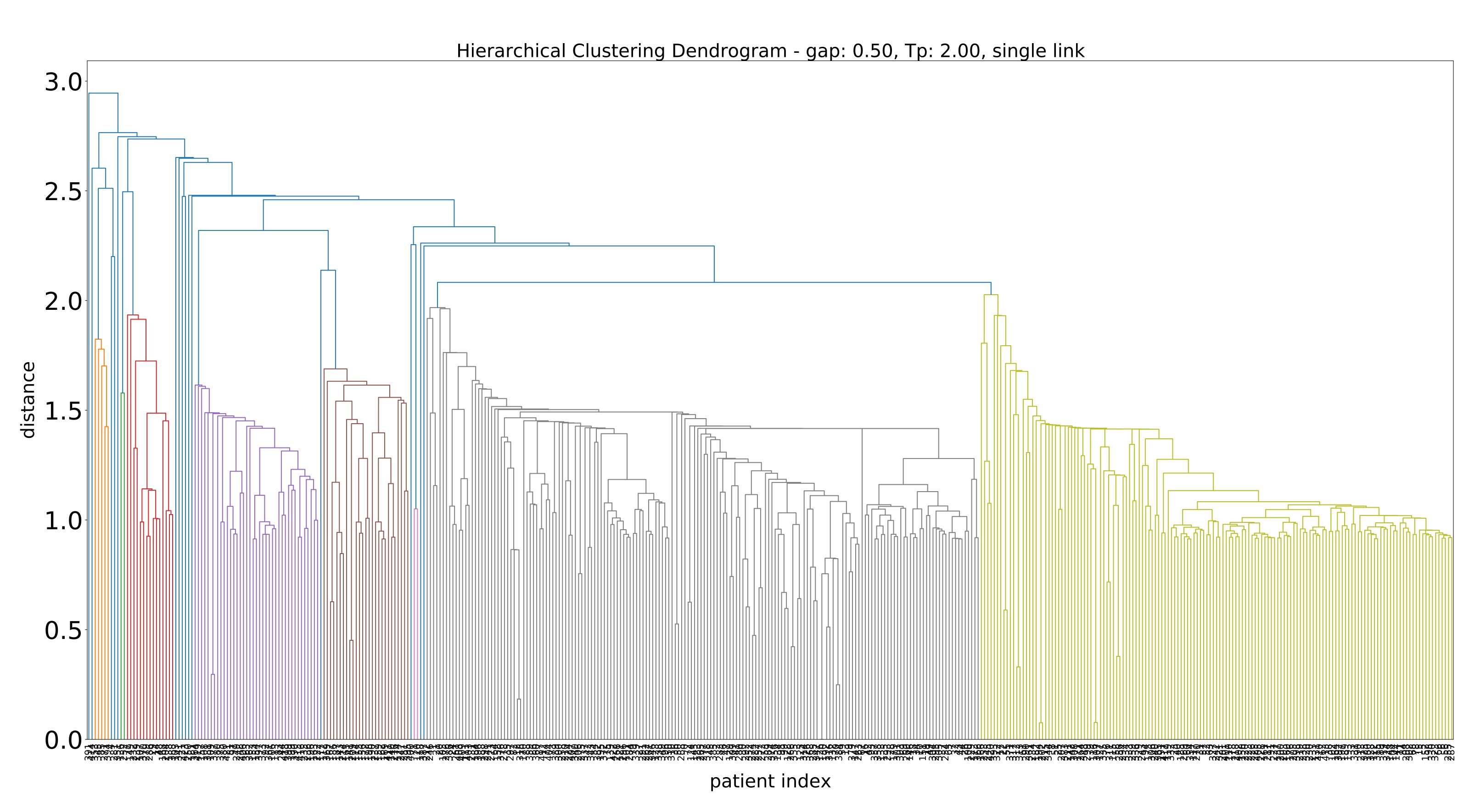


Average values of five clustering indices gap: 0.40, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99347 | 0.98716 | 0.57944 | 0.00331 | 0.57944 | 0.99337 | 0.01213 | 0.99357 | 0.00365 | 0.97581 | 0.97581 | 2.0 | 0.50909 | 0.35859 |
| 3.0 | 1.0 | 0.98327 | 0.96738 | 0.83704 | 0.00879 | 0.69548 | 0.98302 | -0.08262 | 0.98351 | 0.00044 | 0.9402 | 0.93953 | 2.0 | 0.47613 | 0.34729 |
| 4.0 | 1.0 | 0.99258 | 0.98547 | 0.90567 | 0.0041 | 0.89467 | 0.99251 | -0.29484 | 0.99264 | 0.00046 | 0.97367 | 0.97253 | 2.0 | 0.58806 | 0.34638 |
| 5.0 | 1.0 | 0.99342 | 0.98699 | 0.90312 | 0.00382 | 0.93059 | 0.99338 | -0.49809 | 0.99347 | 0.00044 | 0.97676 | 0.97481 | 2.0 | 0.66338 | 0.34 |
| 6.0 | 1.0 | 0.99352 | 0.98733 | 0.92273 | 0.00422 | 0.94618 | 0.99342 | -0.72404 | 0.99363 | 0.00041 | 0.97826 | 0.97615 | 2.0 | 0.612 | 0.33923 |
| 7.0 | 1.0 | 0.98719 | 0.97526 | 0.85024 | 0.00704 | 0.91402 | 0.98677 | -0.89996 | 0.98762 | 0.00038 | 0.9594 | 0.95541 | 2.0 | 0.59092 | 0.326 |
| 8.0 | 1.0 | 0.97753 | 0.95718 | 0.79302 | 0.01172 | 0.8741 | 0.97652 | -1.12364 | 0.97855 | 0.00034 | 0.93257 | 0.92585 | 2.0 | 0.63068 | 0.32386 |
| 9.0 | 1.0 | 0.95902 | 0.92286 | 0.679 | 0.02146 | 0.80243 | 0.95667 | -1.30576 | 0.96141 | 0.0003 | 0.88243 | 0.87124 | 2.0 | 0.75148 | 0.31017 |
| 10.0 | 1.0 | 0.92884 | 0.8687 | 0.56726 | 0.03738 | 0.71494 | 0.92365 | -1.51608 | 0.93419 | 0.00025 | 0.80899 | 0.79109 | 2.0 | 0.77407 | 0.30673 |
| 11.0 | 1.0 | 0.90344 | 0.82311 | 0.47842 | 0.05004 | 0.64662 | 0.89589 | -1.74883 | 0.91123 | 0.00021 | 0.74827 | 0.72415 | 2.0 | 0.79324 | 0.30628 |
| 12.0 | 1.0 | 0.87891 | 0.77942 | 0.41047 | 0.06233 | 0.59309 | 0.86917 | -2.13676 | 0.88897 | 0.00017 | 0.69335 | 0.66051 | 2.0 | 0.76767 | 0.30269 |
| 13.0 | 1.0 | 0.94067 | 0.89217 | 0.85252 | 0.0426 | 0.83828 | 0.93745 | -5.46905 | 0.94398 | 0.00014 | 0.86647 | 0.82625 | 2.0 | 0.70698 | 0.29845 |
| 14.0 | 1.0 | 0.95422 | 0.91932 | 0.88183 | 0.0406 | 0.9036 | 0.95087 | -6.96353 | 0.95773 | 0.00015 | 0.9124 | 0.87589 | 2.0 | 0.67698 | 0.29214 |
| 15.0 | 1.00001 | 0.93966 | 0.89319 | 0.82726 | 0.05342 | 0.88864 | 0.93352 | -7.84478 | 0.94615 | 0.00015 | 0.89194 | 0.84057 | 2.0 | 0.69735 | 0.2874 |
| 16.0 | 1.0 | 0.92579 | 0.86935 | 0.78315 | 0.06457 | 0.8665 | 0.91798 | -8.51514 | 0.93409 | 0.00014 | 0.86973 | 0.80685 | 2.0 | 0.71759 | 0.28465 |
| 17.0 | 1.00002 | 0.91124 | 0.84538 | 0.7577 | 0.05297 | 0.84793 | 0.90117 | -9.81399 | 0.92195 | 0.00014 | 0.85124 | 0.77799 | 2.0 | 0.70411 | 0.27998 |
| 18.0 | 1.00001 | 0.89016 | 0.80939 | 0.71021 | 0.06363 | 0.8172 | 0.877 | -10.42398 | 0.90415 | 0.00013 | 0.82051 | 0.73107 | 2.0 | 0.6809 | 0.27815 |
| 19.0 | 1.00002 | 0.86107 | 0.76121 | 0.65612 | 0.07958 | 0.77292 | 0.8448 | -11.44889 | 0.87836 | 0.00013 | 0.78005 | 0.66686 | 2.0 | 0.66648 | 0.26776 |
| 20.0 | 1.00001 | 0.83159 | 0.71189 | 0.58605 | 0.09658 | 0.73109 | 0.81016 | -12.21952 | 0.85454 | 0.00012 | 0.73803 | 0.6048 | 2.0 | 0.71571 | 0.26428 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.40, Tp: 2.00, single link

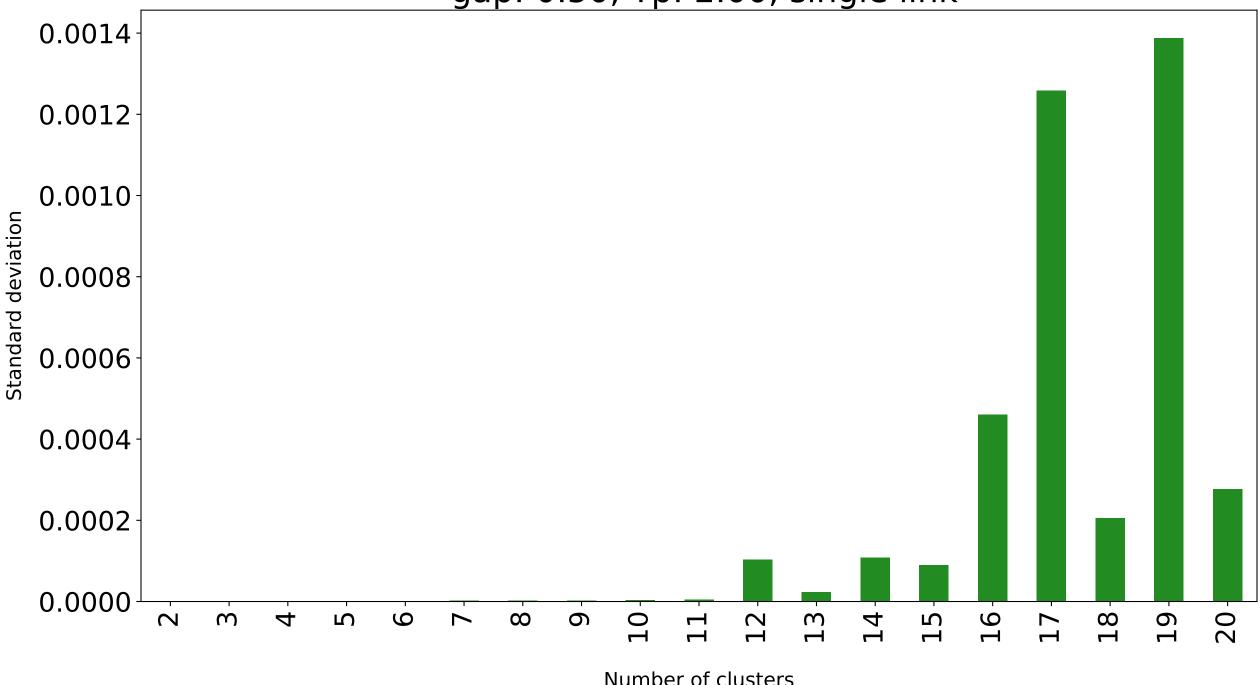


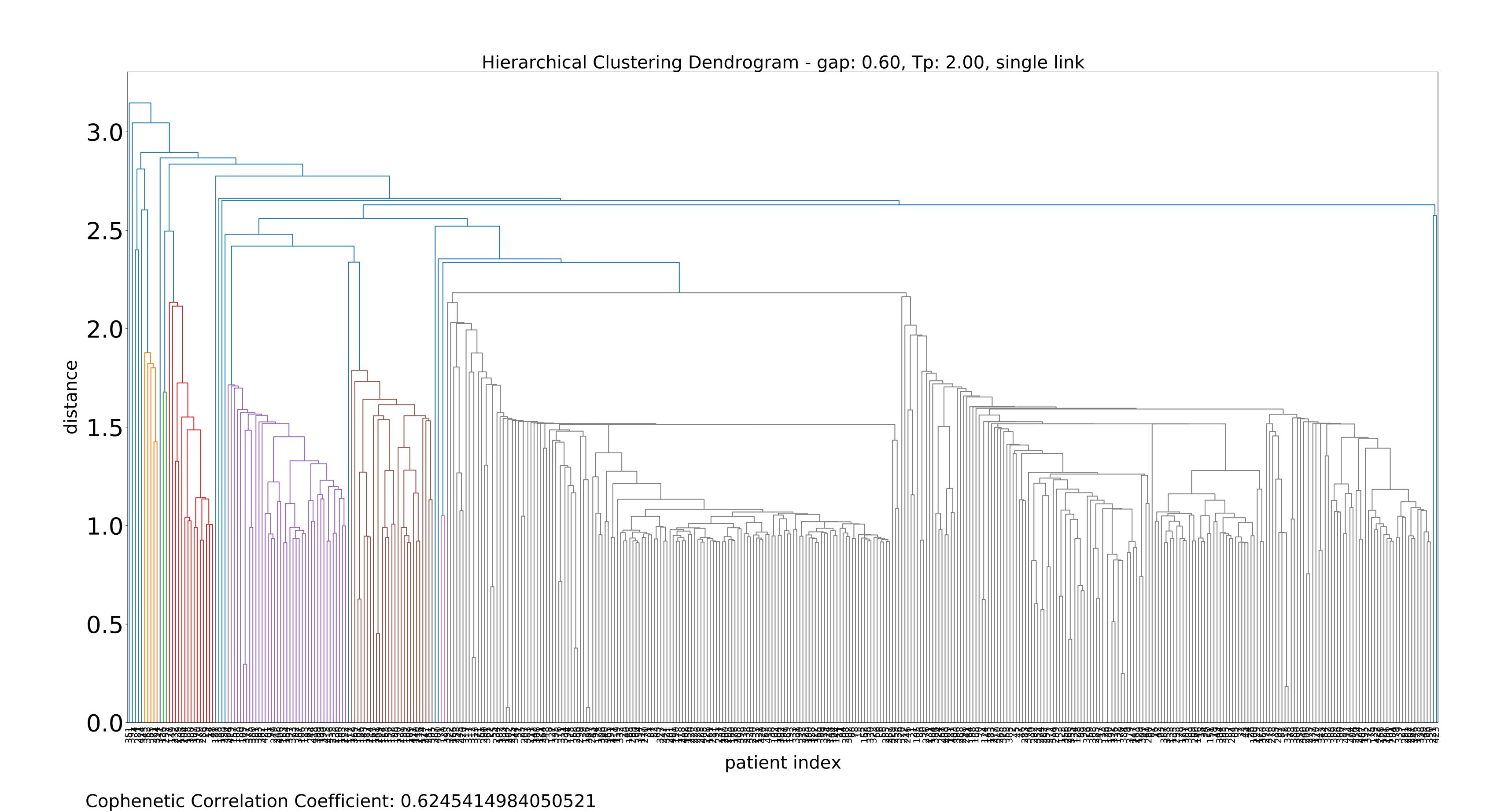


Average values of five clustering indices gap: 0.50, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99344 | 0.98704 | 0.46733 | 0.00331 | 0.46732 | 0.99337 | 0.01351 | 0.99351 | 0.00294 | 0.9752 | 0.9752 | 2.0 | 0.50618 | 0.35011 |
| 3.0 | 1.0 | 0.97695 | 0.95566 | 0.58425 | 0.01202 | 0.52568 | 0.97681 | 0.00079 | 0.97709 | 0.00063 | 0.9192 | 0.91836 | 2.0 | 0.46092 | 0.32871 |
| 4.0 | 1.0 | 0.97243 | 0.94712 | 0.58208 | 0.01455 | 0.63436 | 0.97203 | -0.09344 | 0.97284 | 0.00055 | 0.90657 | 0.90412 | 2.0 | 0.59308 | 0.32651 |
| 5.0 | 1.0 | 0.98453 | 0.97017 | 0.95501 | 0.00899 | 0.85636 | 0.98421 | -0.49698 | 0.98485 | 0.00035 | 0.94863 | 0.94581 | 2.0 | 0.56018 | 0.32525 |
| 6.0 | 1.0 | 0.98521 | 0.97179 | 0.93155 | 0.00901 | 0.8997 | 0.98466 | -0.79096 | 0.98577 | 0.00033 | 0.95444 | 0.95034 | 2.0 | 0.62179 | 0.31522 |
| 7.0 | 1.0 | 0.98387 | 0.96973 | 0.90749 | 0.01004 | 0.91889 | 0.98305 | -1.10217 | 0.98471 | 0.00032 | 0.95397 | 0.94873 | 2.0 | 0.67328 | 0.3148 |
| 8.0 | 1.0 | 0.97893 | 0.96082 | 0.89532 | 0.01313 | 0.9146 | 0.97763 | -1.43606 | 0.98027 | 0.0003 | 0.94305 | 0.93586 | 2.0 | 0.63411 | 0.31256 |
| 9.0 | 1.0 | 0.96922 | 0.94347 | 0.84232 | 0.01904 | 0.89265 | 0.96684 | -1.71235 | 0.97168 | 0.00028 | 0.92082 | 0.91097 | 2.0 | 0.65254 | 0.30942 |
| 10.0 | 1.0 | 0.94714 | 0.90262 | 0.72449 | 0.02976 | 0.82097 | 0.9431 | -1.89864 | 0.95129 | 0.00025 | 0.8639 | 0.84677 | 2.0 | 0.6235 | 0.29852 |
| 11.0 | 1.0 | 0.9156 | 0.84516 | 0.57416 | 0.0452 | 0.72283 | 0.90888 | -2.1376 | 0.92255 | 0.00021 | 0.78544 | 0.75841 | 2.0 | 0.60878 | 0.29668 |
| 12.0 | 1.0 | 0.88782 | 0.7956 | 0.47066 | 0.05939 | 0.65036 | 0.87828 | -2.45502 | 0.89774 | 0.00017 | 0.72124 | 0.68574 | 2.0 | 0.62829 | 0.29473 |
| 13.0 | 0.99999 | 0.85816 | 0.74511 | 0.38861 | 0.07544 | 0.59051 | 0.84457 | -2.78639 | 0.87249 | 0.00015 | 0.66169 | 0.61789 | 2.0 | 0.65681 | 0.30176 |
| 14.0 | 0.99999 | 0.82318 | 0.68536 | 0.28506 | 0.09362 | 0.51454 | 0.80488 | -3.05406 | 0.84267 | 0.00012 | 0.58971 | 0.53722 | 2.0 | 0.73606 | 0.30165 |
| 15.0 | 1.0 | 0.93628 | 0.88653 | 0.81251 | 0.04914 | 0.88235 | 0.92975 | -7.7129 | 0.9432 | 0.00015 | 0.88478 | 0.83035 | 2.0 | 0.68497 | 0.30174 |
| 16.0 | 1.0 | 0.91324 | 0.84685 | 0.7586 | 0.06713 | 0.84705 | 0.90398 | -8.35185 | 0.92306 | 0.00014 | 0.8497 | 0.7756 | 2.0 | 0.67361 | 0.28666 |
| 17.0 | 1.00011 | 0.88128 | 0.79357 | 0.68892 | 0.06727 | 0.80114 | 0.8676 | -9.58239 | 0.89583 | 0.00013 | 0.80498 | 0.7077 | 2.0 | 0.66514 | 0.28458 |
| 18.0 | 1.00001 | 0.84765 | 0.73616 | 0.60629 | 0.08432 | 0.74906 | 0.82933 | -10.46542 | 0.86721 | 0.00012 | 0.75365 | 0.63064 | 2.0 | 0.6832 | 0.28355 |
| 19.0 | 1.00002 | 0.81766 | 0.68682 | 0.54042 | 0.1004 | 0.70654 | 0.79415 | -11.25322 | 0.84291 | 0.00012 | 0.71151 | 0.56955 | 2.0 | 0.70093 | 0.28265 |
| 20.0 | 1.00002 | 0.7856 | 0.63672 | 0.48424 | 0.11892 | 0.66531 | 0.75584 | -12.14419 | 0.81788 | 0.00011 | 0.67231 | 0.51278 | 2.0 | 0.71497 | 0.28191 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.50, Tp: 2.00, single link

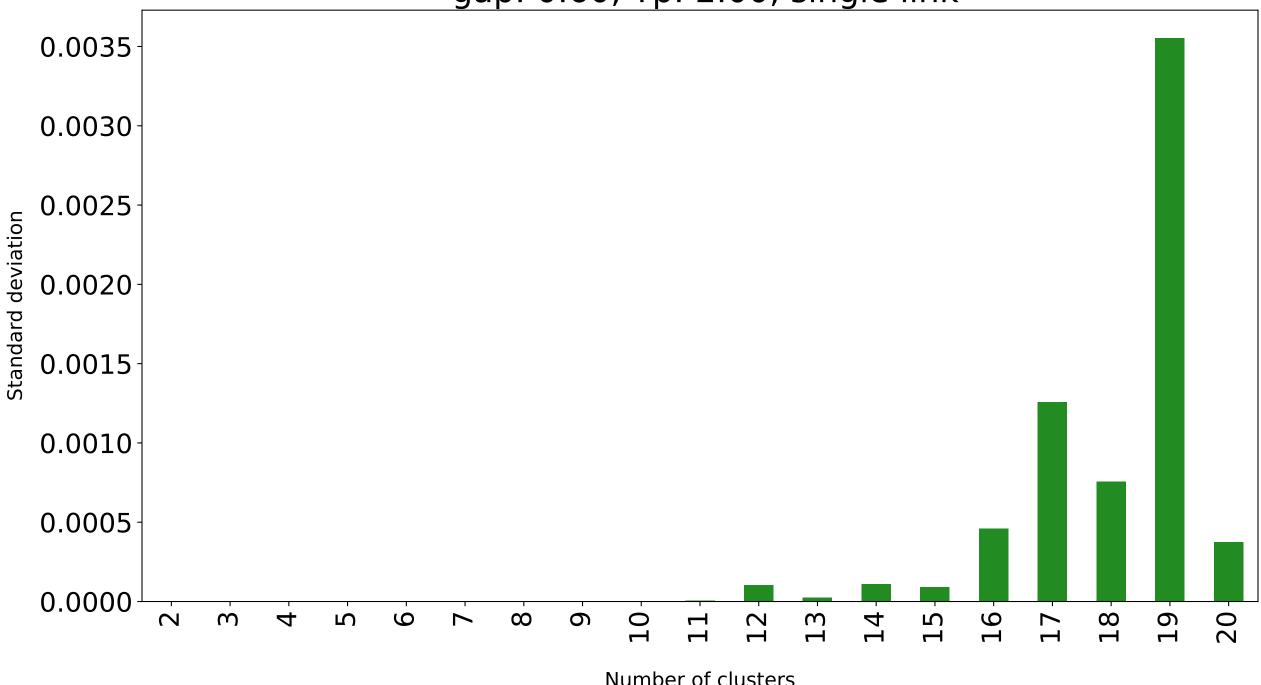


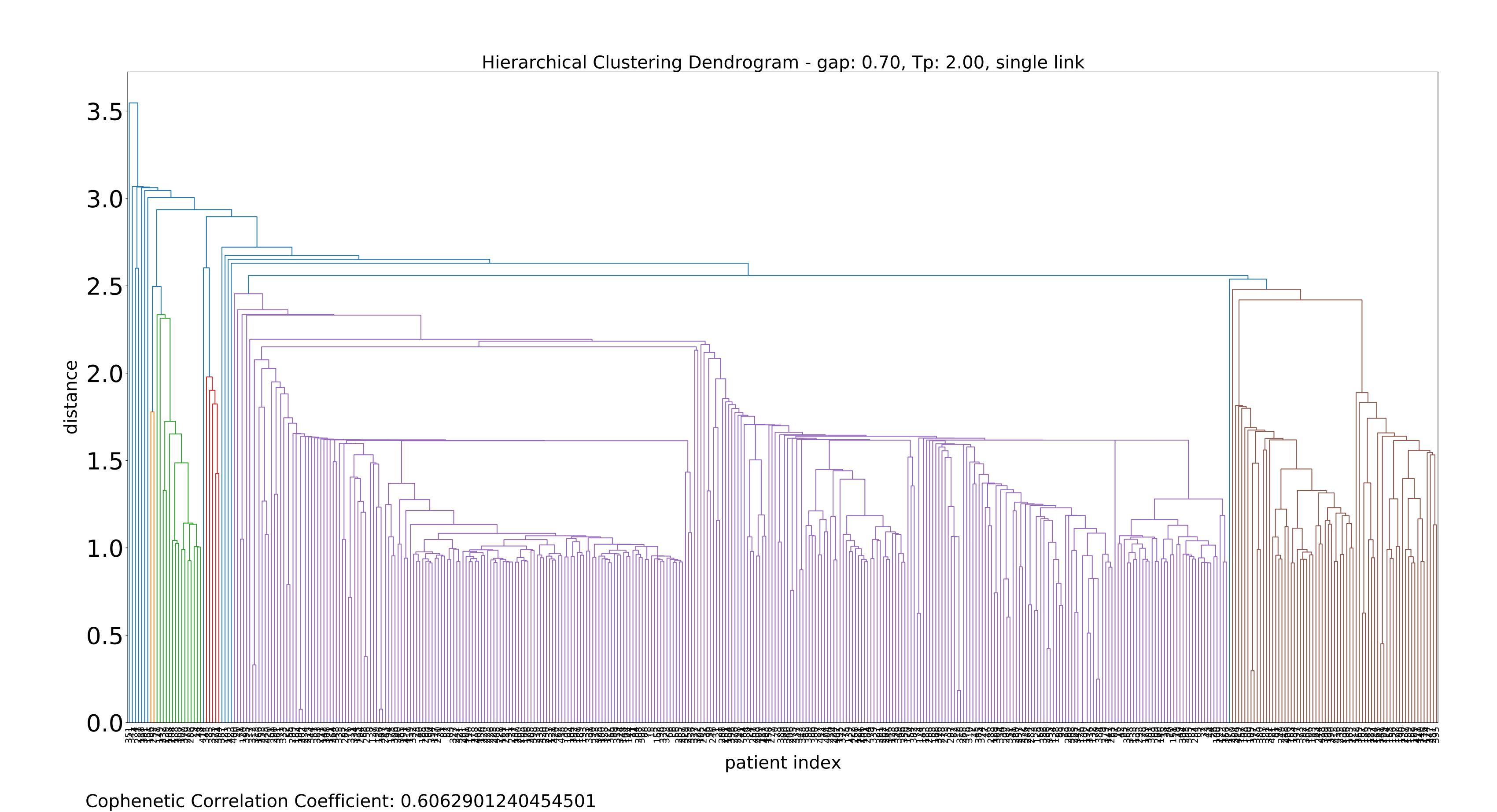


Average values of five clustering indices gap: 0.60, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99781 | 0.99565 | 0.6718 | 0.0011 | 0.6718 | 0.99779 | 0.00361 | 0.99782 | 0.00423 | 0.99156 | 0.99156 | 2.0 | 0.67565 | 0.34532 |
| 3.0 | 1.0 | 0.99149 | 0.9832 | 0.55771 | 0.00428 | 0.63715 | 0.99138 | 0.00096 | 0.99159 | 0.00215 | 0.96814 | 0.968 | 2.0 | 0.6666 | 0.33419 |
| 4.0 | 1.0 | 0.97755 | 0.95655 | 0.66431 | 0.01189 | 0.60732 | 0.97735 | -0.06682 | 0.97775 | 0.00061 | 0.9211 | 0.9195 | 2.0 | 0.59076 | 0.31778 |
| 5.0 | 1.0 | 0.97359 | 0.9488 | 0.60816 | 0.01412 | 0.67721 | 0.97319 | -0.19916 | 0.97399 | 0.00051 | 0.90921 | 0.90591 | 2.0 | 0.66973 | 0.31471 |
| 6.0 | 1.0 | 0.98641 | 0.97391 | 0.95386 | 0.00843 | 0.88443 | 0.98613 | -0.74829 | 0.9867 | 0.00034 | 0.9557 | 0.95286 | 2.0 | 0.62975 | 0.31124 |
| 7.0 | 1.0 | 0.98593 | 0.97361 | 0.91571 | 0.00779 | 0.91918 | 0.98531 | -0.9927 | 0.98656 | 0.00033 | 0.95902 | 0.95504 | 2.0 | 0.58087 | 0.30851 |
| 8.0 | 1.0 | 0.98007 | 0.96284 | 0.87537 | 0.0109 | 0.91416 | 0.97888 | -1.31092 | 0.98128 | 0.00031 | 0.94525 | 0.93882 | 2.0 | 0.63209 | 0.31491 |
| 9.0 | 1.0 | 0.96953 | 0.94351 | 0.82391 | 0.01633 | 0.88267 | 0.96757 | -1.60194 | 0.97153 | 0.00029 | 0.91871 | 0.90878 | 2.0 | 0.67226 | 0.31482 |
| 10.0 | 1.0 | 0.94973 | 0.90739 | 0.73463 | 0.02679 | 0.82182 | 0.94614 | -1.89129 | 0.95341 | 0.00025 | 0.86948 | 0.85321 | 2.0 | 0.69831 | 0.31364 |
| 11.0 | 1.0 | 0.93391 | 0.87875 | 0.68342 | 0.03552 | 0.78437 | 0.92877 | -2.25318 | 0.93919 | 0.00023 | 0.83274 | 0.81065 | 2.0 | 0.66732 | 0.31099 |
| 12.0 | 1.0 | 0.90336 | 0.82373 | 0.553 | 0.05136 | 0.70319 | 0.89522 | -2.53421 | 0.91179 | 0.00019 | 0.76085 | 0.72925 | 2.0 | 0.6845 | 0.30786 |
| 13.0 | 0.99999 | 0.86824 | 0.76145 | 0.4187 | 0.07028 | 0.61213 | 0.85627 | -2.80063 | 0.88069 | 0.00016 | 0.68086 | 0.63922 | 2.0 | 0.75634 | 0.30451 |
| 14.0 | 0.99999 | 0.93796 | 0.88935 | 0.86689 | 0.04411 | 0.86293 | 0.93274 | -6.60005 | 0.94343 | 0.00015 | 0.87647 | 0.83227 | 2.0 | 0.70124 | 0.30268 |
| 15.0 | 0.99999 | 0.93699 | 0.88811 | 0.8307 | 0.04755 | 0.88028 | 0.93086 | -7.70309 | 0.94346 | 0.00015 | 0.88516 | 0.83327 | 2.0 | 0.72022 | 0.29816 |
| 16.0 | 0.99999 | 0.91626 | 0.85153 | 0.76321 | 0.06103 | 0.84978 | 0.90738 | -8.4739 | 0.92565 | 0.00014 | 0.85237 | 0.78187 | 2.0 | 0.70243 | 0.29519 |
| 17.0 | 0.99989 | 0.8857 | 0.79812 | 0.67868 | 0.08078 | 0.7997 | 0.87314 | -9.20292 | 0.89898 | 0.00013 | 0.802 | 0.70708 | 2.0 | 0.71813 | 0.29325 |
| 18.0 | 1.00009 | 0.85818 | 0.75411 | 0.62874 | 0.07905 | 0.76366 | 0.84132 | -10.53608 | 0.87622 | 0.00013 | 0.76775 | 0.654 | 2.0 | 0.70743 | 0.28614 |
| 19.0 | 1.0 | 0.82329 | 0.69726 | 0.55491 | 0.09721 | 0.71477 | 0.80016 | -11.28492 | 0.84826 | 0.00012 | 0.71931 | 0.58483 | 2.0 | 0.75912 | 0.28391 |
| 20.0 | 0.99999 | 0.78225 | 0.62927 | 0.46673 | 0.12076 | 0.65578 | 0.75256 | -12.179 | 0.81436 | 0.00011 | 0.66168 | 0.49918 | 2.0 | 0.77058 | 0.27849 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.60, Tp: 2.00, single link

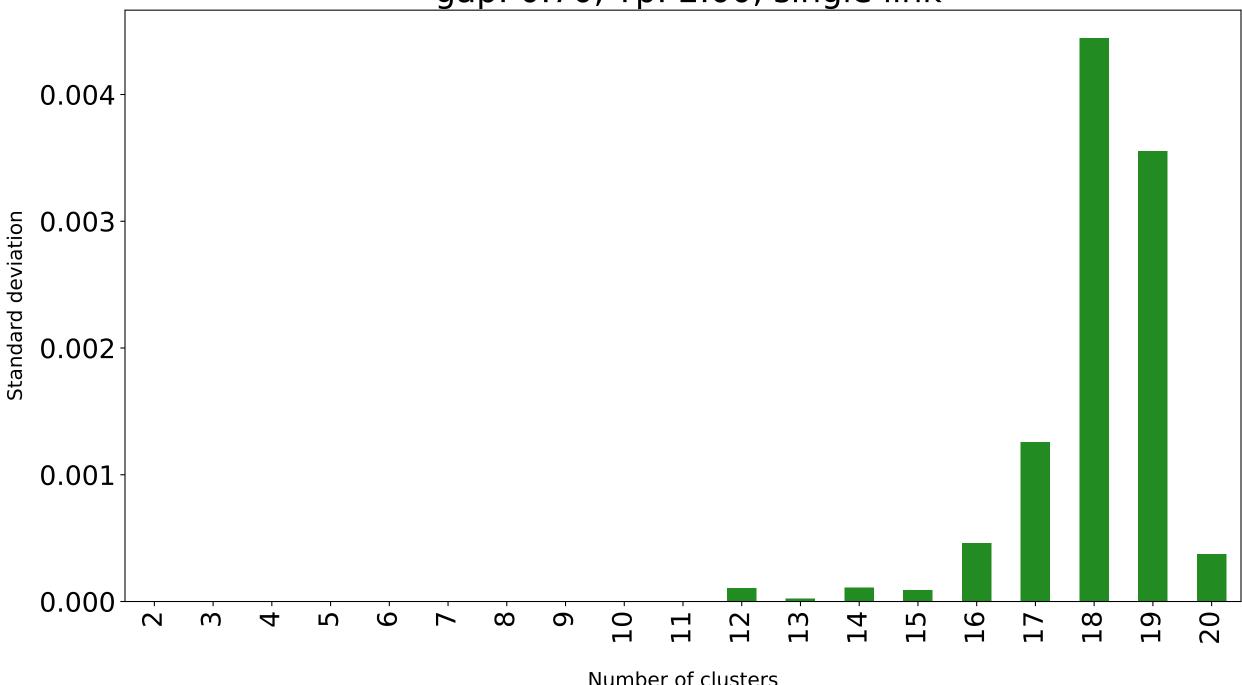


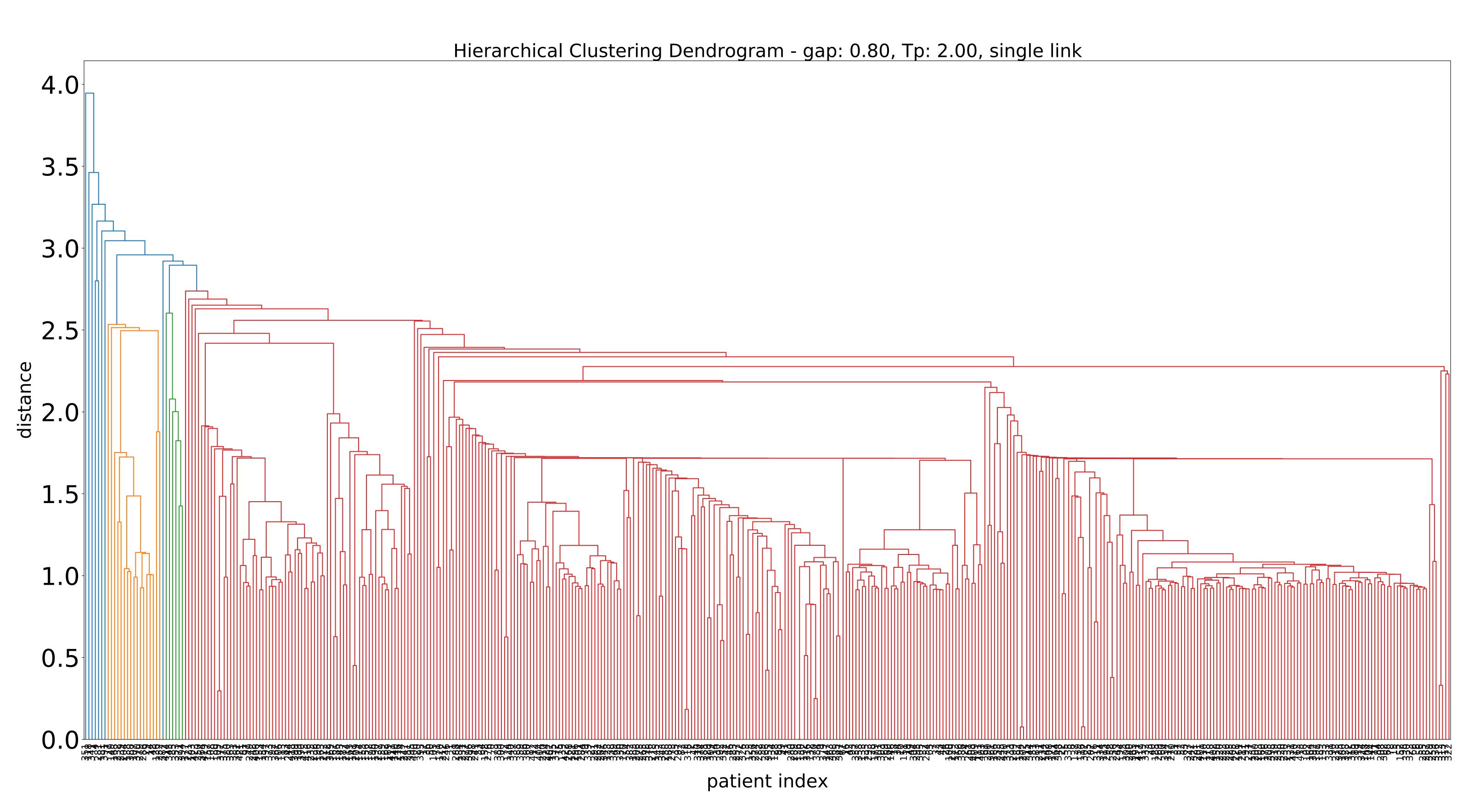


Average values of five clustering indices gap: 0.70, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99918 | 0.99837 | 0.764 | 0.00041 | 0.764 | 0.99918 | 0.00027 | 0.99918 | 0.00481 | 0.99676 | 0.99676 | 2.0 | 0.6945 | 0.36517 |
| 3.0 | 1.0 | 0.99554 | 0.99113 | 0.54169 | 0.00222 | 0.62503 | 0.99553 | 0.00067 | 0.99555 | 0.00225 | 0.98258 | 0.98249 | 2.0 | 0.75098 | 0.31586 |
| 4.0 | 1.0 | 0.9946 | 0.9893 | 0.69264 | 0.00269 | 0.75029 | 0.99458 | -0.04474 | 0.99462 | 0.00157 | 0.97934 | 0.97912 | 2.0 | 0.69345 | 0.3156 |
| 5.0 | 1.0 | 0.9921 | 0.98441 | 0.70697 | 0.00394 | 0.79543 | 0.992 | -0.10807 | 0.99219 | 0.00124 | 0.97078 | 0.97028 | 2.0 | 0.74944 | 0.33917 |
| 6.0 | 1.0 | 0.98333 | 0.96729 | 0.59361 | 0.00833 | 0.72031 | 0.98303 | -0.17301 | 0.98363 | 0.00085 | 0.94015 | 0.93888 | 2.0 | 0.75001 | 0.33734 |
| 7.0 | 1.0 | 0.96957 | 0.94078 | 0.46277 | 0.01524 | 0.62624 | 0.96881 | -0.22751 | 0.97032 | 0.00057 | 0.89471 | 0.89203 | 2.0 | 0.78484 | 0.33283 |
| 8.0 | 1.0 | 0.97257 | 0.94717 | 0.74009 | 0.01375 | 0.76901 | 0.97198 | -0.88677 | 0.97317 | 0.00031 | 0.91076 | 0.90428 | 2.0 | 0.73895 | 0.32581 |
| 9.0 | 1.0 | 0.98028 | 0.96261 | 0.87884 | 0.01031 | 0.89326 | 0.97944 | -1.51389 | 0.98112 | 0.0003 | 0.94195 | 0.93564 | 2.0 | 0.67343 | 0.32134 |
| 10.0 | 1.0 | 0.97213 | 0.94764 | 0.83024 | 0.01465 | 0.88288 | 0.97053 | -1.88806 | 0.97376 | 0.00028 | 0.92283 | 0.91319 | 2.0 | 0.70525 | 0.30193 |
| 11.0 | 1.0 | 0.9577 | 0.9212 | 0.76326 | 0.0223 | 0.84293 | 0.95492 | -2.20964 | 0.96053 | 0.00026 | 0.88724 | 0.87262 | 2.0 | 0.73054 | 0.29859 |
| 12.0 | 1.0 | 0.94214 | 0.89322 | 0.70017 | 0.03082 | 0.80242 | 0.93792 | -2.53651 | 0.94646 | 0.00023 | 0.85065 | 0.83097 | 2.0 | 0.74768 | 0.29605 |
| 13.0 | 1.0 | 0.91744 | 0.84933 | 0.61118 | 0.04486 | 0.74174 | 0.91058 | -2.88696 | 0.92454 | 0.0002 | 0.79483 | 0.76739 | 2.0 | 0.76618 | 0.29354 |
| 14.0 | 1.0 | 0.88868 | 0.79694 | 0.48495 | 0.0594 | 0.66058 | 0.87926 | -3.14986 | 0.89843 | 0.00017 | 0.72503 | 0.68801 | 2.0 | 0.77168 | 0.29059 |
| 15.0 | 0.99999 | 0.86117 | 0.74841 | 0.38756 | 0.07321 | 0.59307 | 0.84863 | -3.35308 | 0.8742 | 0.00015 | 0.66382 | 0.61896 | 2.0 | 0.83275 | 0.29031 |
| 16.0 | 1.0 | 0.93843 | 0.88918 | 0.8651 | 0.0458 | 0.86022 | 0.93378 | -7.71526 | 0.94326 | 0.00014 | 0.87436 | 0.82879 | 2.0 | 0.77978 | 0.2857 |
| 17.0 | 0.99999 | 0.94297 | 0.89774 | 0.84242 | 0.04616 | 0.88594 | 0.93789 | -8.85368 | 0.94831 | 0.00015 | 0.89192 | 0.84398 | 2.0 | 0.79198 | 0.28334 |
| 18.0 | 0.99972 | 0.92471 | 0.8652 | 0.77827 | 0.05692 | 0.86001 | 0.91732 | -9.68642 | 0.93248 | 0.00014 | 0.86311 | 0.79738 | 2.0 | 0.77159 | 0.27863 |
| 19.0 | 0.99999 | 0.89742 | 0.8195 | 0.71006 | 0.07451 | 0.81957 | 0.88592 | -10.4448 | 0.90968 | 0.00014 | 0.82231 | 0.73752 | 2.0 | 0.78156 | 0.2768 |
| 20.0 | 1.0 | 0.86558 | 0.76509 | 0.63219 | 0.09466 | 0.77054 | 0.84976 | -11.2314 | 0.88247 | 0.00013 | 0.7733 | 0.66468 | 2.0 | 0.79191 | 0.27403 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.70, Tp: 2.00, single link

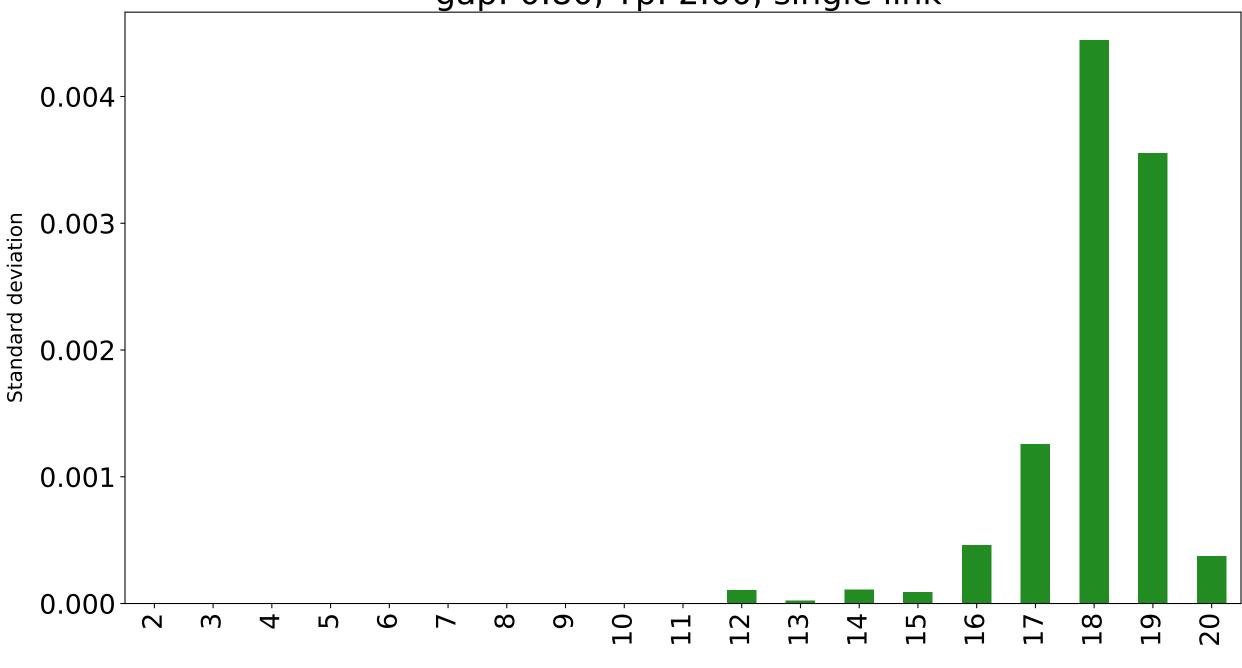




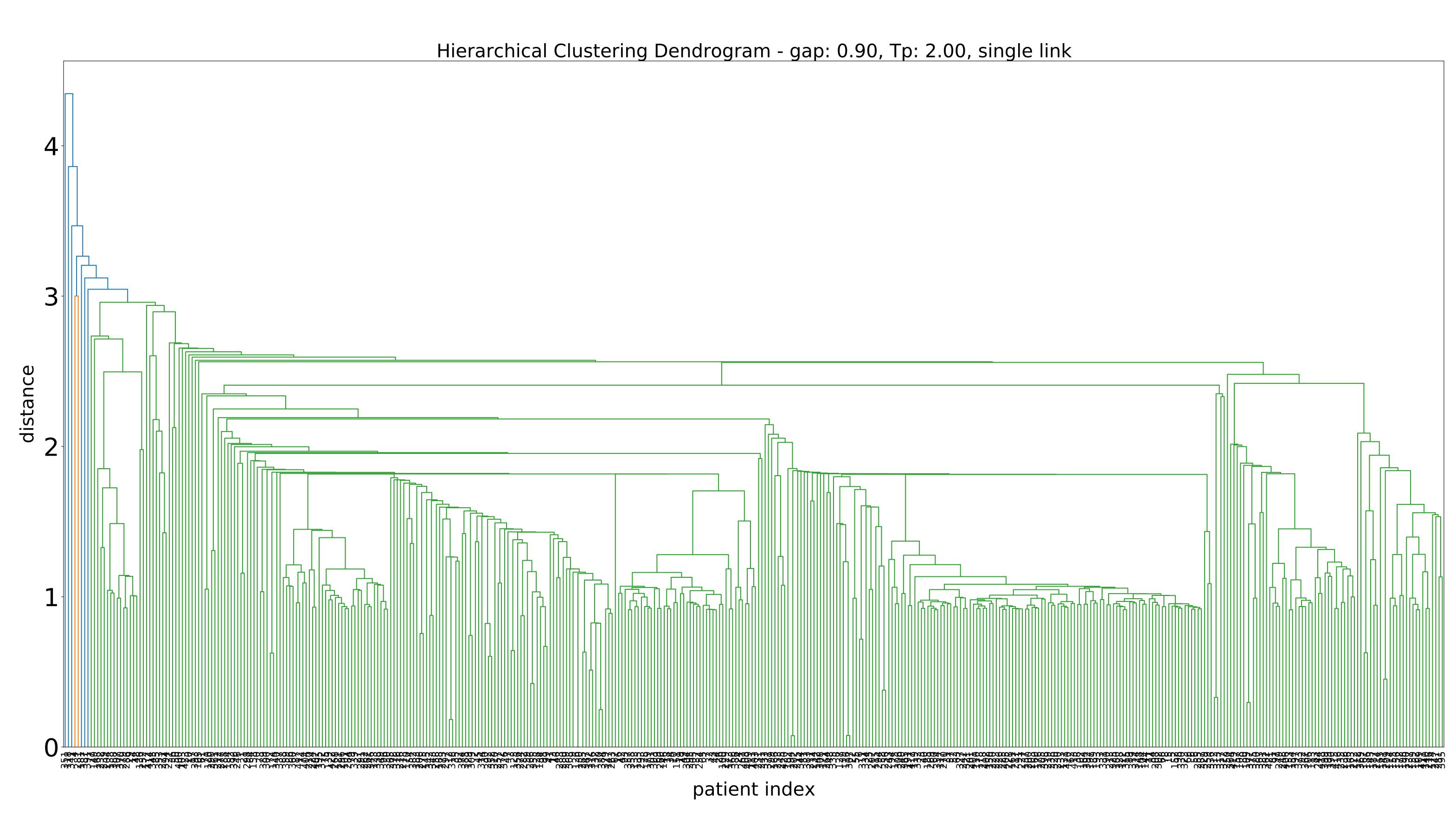
Average values of five clustering indices gap: 0.80, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | К | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99909 | 0.99819 | 0.71997 | 0.00045 | 0.71997 | 0.99909 | 0.0007 | 0.99909 | 0.00453 | 0.9964 | 0.9964 | 2.0 | 0.70962 | 0.38272 |
| 3.0 | 1.0 | 0.9976 | 0.99521 | 0.68725 | 0.00119 | 0.77989 | 0.9976 | -0.01123 | 0.9976 | 0.00284 | 0.99057 | 0.99052 | 2.0 | 0.78711 | 0.35143 |
| 4.0 | 1.0 | 0.99531 | 0.99067 | 0.637 | 0.00233 | 0.7393 | 0.9953 | -0.03495 | 0.99532 | 0.00178 | 0.98179 | 0.9816 | 2.0 | 0.81444 | 0.33173 |
| 5.0 | 1.0 | 0.99366 | 0.98745 | 0.71727 | 0.00314 | 0.78533 | 0.99363 | -0.10071 | 0.9937 | 0.00126 | 0.97601 | 0.97561 | 2.0 | 0.75407 | 0.32132 |
| 6.0 | 1.0 | 0.98914 | 0.97864 | 0.69181 | 0.00542 | 0.78654 | 0.98897 | -0.1782 | 0.9893 | 0.00099 | 0.96054 | 0.95971 | 2.0 | 0.78868 | 0.31516 |
| 7.0 | 1.0 | 0.97892 | 0.95871 | 0.5643 | 0.01053 | 0.70235 | 0.97851 | -0.25904 | 0.97934 | 0.00069 | 0.92532 | 0.92331 | 2.0 | 0.78329 | 0.30914 |
| 8.0 | 1.0 | 0.9761 | 0.95363 | 0.78985 | 0.01206 | 0.76231 | 0.97581 | -0.83522 | 0.97638 | 0.00032 | 0.91909 | 0.91409 | 2.0 | 0.73635 | 0.30036 |
| 9.0 | 1.0 | 0.97839 | 0.95794 | 0.77983 | 0.01095 | 0.82618 | 0.97804 | -1.21492 | 0.97875 | 0.00031 | 0.92848 | 0.92195 | 2.0 | 0.76493 | 0.29651 |
| 10.0 | 1.0 | 0.98326 | 0.96798 | 0.89394 | 0.00913 | 0.91072 | 0.98261 | -1.85428 | 0.98392 | 0.0003 | 0.94999 | 0.94379 | 2.0 | 0.70633 | 0.29397 |
| 11.0 | 1.0 | 0.97949 | 0.96108 | 0.84915 | 0.01099 | 0.90841 | 0.97846 | -2.1602 | 0.98053 | 0.00029 | 0.94149 | 0.93356 | 2.0 | 0.78963 | 0.28429 |
| 12.0 | 1.0 | 0.96537 | 0.93521 | 0.78597 | 0.01836 | 0.86645 | 0.96319 | -2.4764 | 0.96758 | 0.00026 | 0.90633 | 0.89363 | 2.0 | 0.80671 | 0.27795 |
| 13.0 | 1.0 | 0.9483 | 0.90404 | 0.71226 | 0.02747 | 0.81757 | 0.94469 | -2.80556 | 0.95198 | 0.00024 | 0.86452 | 0.84594 | 2.0 | 0.82045 | 0.27296 |
| 14.0 | 1.0 | 0.93463 | 0.87929 | 0.66026 | 0.03466 | 0.78144 | 0.92981 | -3.14209 | 0.93957 | 0.00022 | 0.83212 | 0.80876 | 2.0 | 0.82892 | 0.2692 |
| 15.0 | 1.0 | 0.91213 | 0.8388 | 0.57384 | 0.04656 | 0.72275 | 0.90517 | -3.5076 | 0.91931 | 0.00019 | 0.7797 | 0.74849 | 2.0 | 0.83943 | 0.26693 |
| 16.0 | 1.0 | 0.88767 | 0.79462 | 0.47691 | 0.05886 | 0.65846 | 0.87838 | -3.77282 | 0.89726 | 0.00017 | 0.72231 | 0.68315 | 2.0 | 0.84146 | 0.26424 |
| 17.0 | 1.0 | 0.93417 | 0.88173 | 0.88262 | 0.04262 | 0.82519 | 0.93058 | -7.78025 | 0.93786 | 0.00014 | 0.85418 | 0.81361 | 2.0 | 0.79064 | 0.25979 |
| 18.0 | 1.0 | 0.94938 | 0.90876 | 0.88175 | 0.03545 | 0.87741 | 0.94663 | -9.15849 | 0.9522 | 0.00015 | 0.89321 | 0.85426 | 2.0 | 0.80169 | 0.25934 |
| 19.0 | 0.99999 | 0.94986 | 0.9094 | 0.86357 | 0.03599 | 0.88794 | 0.94673 | -9.81223 | 0.95309 | 0.00015 | 0.89862 | 0.85567 | 2.0 | 0.80878 | 0.25726 |
| 20.0 | 1.0 | 0.94664 | 0.90353 | 0.8364 | 0.03847 | 0.89077 | 0.94295 | -10.72024 | 0.95047 | 0.00015 | 0.897 | 0.84717 | 2.0 | 0.81932 | 0.25527 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.80, Tp: 2.00, single link



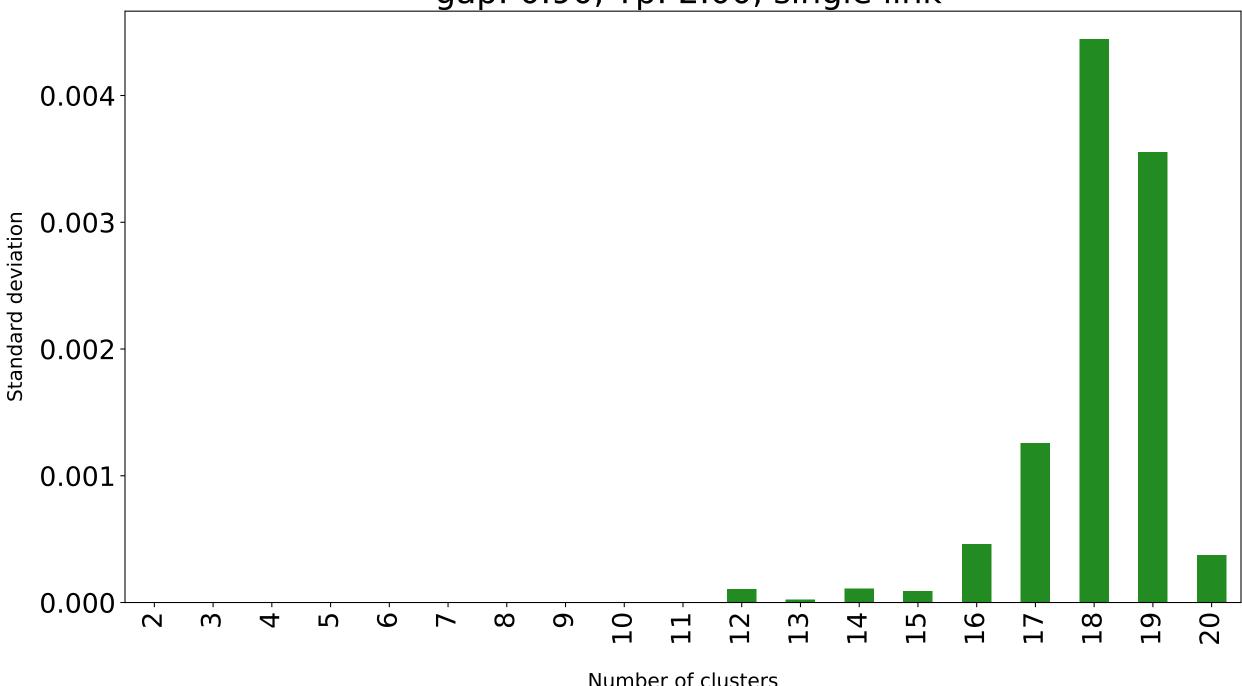
Number of clusters

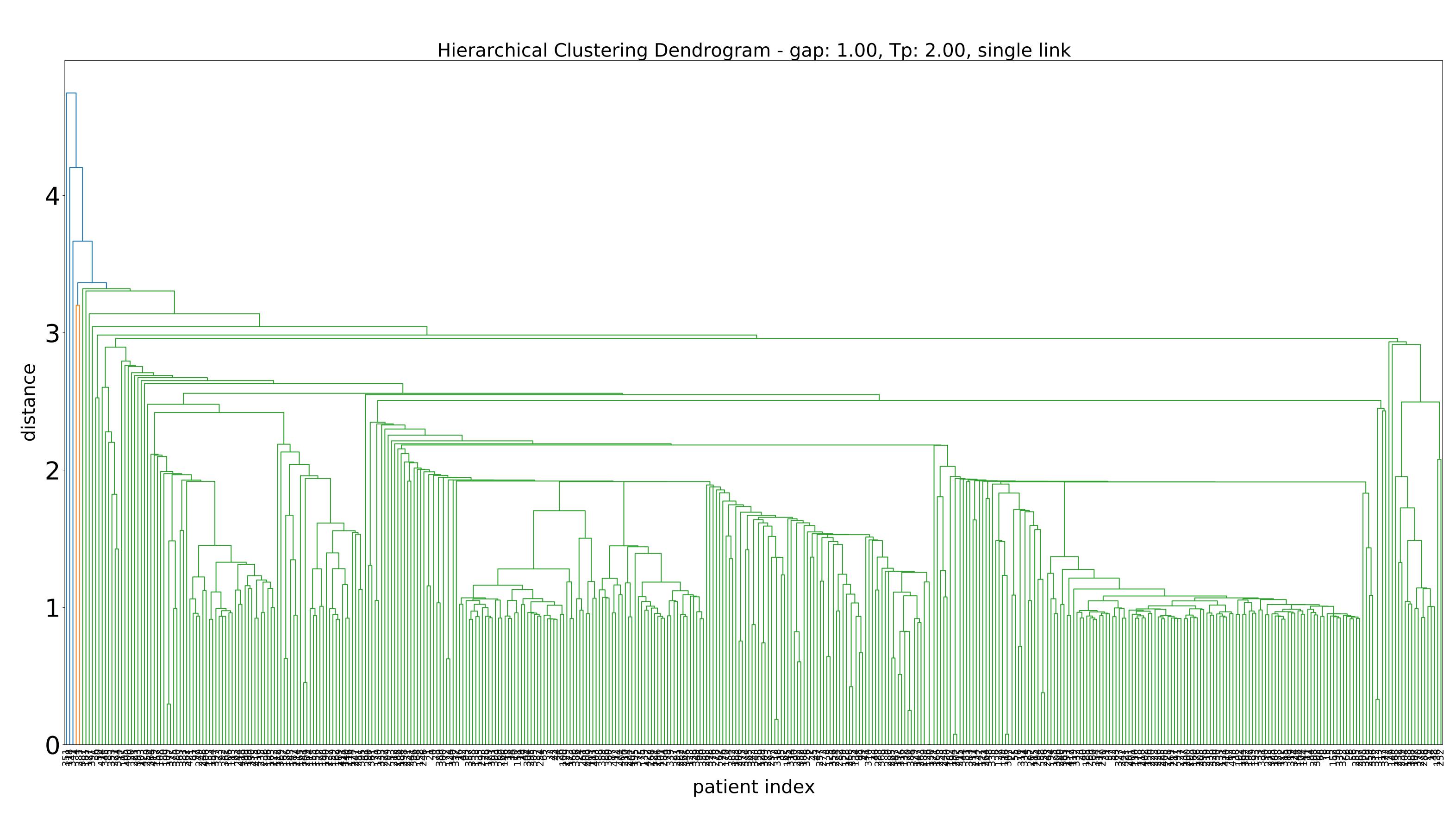


Average values of five clustering indices gap: 0.90, Tp: 2.00, single link

| k | AR | FM | J | AW | VD | Н | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|-----|---------|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|------|---------|---------|
| 2.0 | 1.0 | 0.99913 | 0.99826 | 0.724 | 0.00043 | 0.724 | 0.99913 | 0.00057 | 0.99913 | 0.00456 | 0.99655 | 0.99655 | 2.0 | 0.72272 | 0.39833 |
| 3.0 | 1.0 | 0.99803 | 0.99607 | 0.71102 | 0.00098 | 0.7913 | 0.99803 | -0.01335 | 0.99803 | 0.00284 | 0.99225 | 0.99221 | 2.0 | 0.79578 | 0.3776 |
| 4.0 | 1.0 | 0.99543 | 0.9909 | 0.64327 | 0.00228 | 0.75004 | 0.99541 | -0.03536 | 0.99544 | 0.00184 | 0.98231 | 0.98215 | 2.0 | 0.82138 | 0.33907 |
| 5.0 | 1.0 | 0.99304 | 0.98622 | 0.68799 | 0.00347 | 0.75972 | 0.993 | -0.08975 | 0.99308 | 0.00125 | 0.97367 | 0.97328 | 2.0 | 0.75732 | 0.31927 |
| 6.0 | 1.0 | 0.99109 | 0.98251 | 0.70142 | 0.00448 | 0.79302 | 0.99095 | -0.1705 | 0.99123 | 0.00104 | 0.96757 | 0.96692 | 2.0 | 0.79146 | 0.31334 |
| 7.0 | 1.0 | 0.98701 | 0.97457 | 0.67755 | 0.00657 | 0.78909 | 0.98675 | -0.26908 | 0.98727 | 0.00085 | 0.95379 | 0.95268 | 2.0 | 0.81687 | 0.30515 |
| 8.0 | 1.0 | 0.97899 | 0.95893 | 0.58697 | 0.01073 | 0.72603 | 0.97853 | -0.36143 | 0.97945 | 0.00064 | 0.92631 | 0.92412 | 2.0 | 0.80795 | 0.29776 |
| 9.0 | 1.0 | 0.96524 | 0.93227 | 0.42311 | 0.01775 | 0.62089 | 0.96435 | -0.37341 | 0.96613 | 0.00047 | 0.88031 | 0.87648 | 2.0 | 0.88295 | 0.29337 |
| 10.0 | 1.0 | 0.97878 | 0.95855 | 0.76756 | 0.01077 | 0.82204 | 0.97852 | -1.34465 | 0.97903 | 0.00031 | 0.92867 | 0.9222 | 2.0 | 0.83445 | 0.28974 |
| 11.0 | 1.0 | 0.97967 | 0.96021 | 0.76417 | 0.01044 | 0.8588 | 0.9793 | -1.73011 | 0.98004 | 0.0003 | 0.93319 | 0.92548 | 2.0 | 0.849 | 0.28771 |
| 12.0 | 1.0 | 0.98586 | 0.97283 | 0.88504 | 0.00809 | 0.92475 | 0.9854 | -2.43362 | 0.98632 | 0.00029 | 0.95726 | 0.95134 | 2.0 | 0.80642 | 0.28358 |
| 13.0 | 1.0 | 0.98247 | 0.96634 | 0.84894 | 0.01007 | 0.91319 | 0.98181 | -2.69096 | 0.98315 | 0.00028 | 0.9478 | 0.94031 | 2.0 | 0.8175 | 0.26776 |
| 14.0 | 1.0 | 0.97666 | 0.95546 | 0.80927 | 0.01292 | 0.89124 | 0.97561 | -2.96335 | 0.97772 | 0.00027 | 0.93206 | 0.92236 | 2.0 | 0.83229 | 0.26583 |
| 15.0 | 1.0 | 0.96928 | 0.94171 | 0.77735 | 0.01632 | 0.86462 | 0.96781 | -3.30037 | 0.97077 | 0.00026 | 0.91255 | 0.89985 | 2.0 | 0.84282 | 0.26489 |
| 16.0 | 1.0 | 0.96074 | 0.92643 | 0.75889 | 0.02047 | 0.84361 | 0.95865 | -3.71892 | 0.96288 | 0.00024 | 0.893 | 0.87694 | 2.0 | 0.82026 | 0.28344 |
| 17.0 | 1.0 | 0.95259 | 0.91155 | 0.72533 | 0.0245 | 0.8224 | 0.94983 | -4.15375 | 0.9554 | 0.00023 | 0.87345 | 0.85415 | 2.0 | 0.82968 | 0.28037 |
| 18.0 | 1.0 | 0.93858 | 0.88638 | 0.67537 | 0.03184 | 0.78897 | 0.93446 | -4.55098 | 0.94281 | 0.00021 | 0.84151 | 0.81711 | 2.0 | 0.83619 | 0.28007 |
| 19.0 | 1.0 | 0.92553 | 0.86311 | 0.63319 | 0.03877 | 0.76095 | 0.92004 | -5.01414 | 0.93118 | 0.00019 | 0.81298 | 0.78373 | 2.0 | 0.8441 | 0.2777 |
| 20.0 | 1.0 | 0.90892 | 0.83322 | 0.57459 | 0.04747 | 0.72253 | 0.90177 | -5.38603 | 0.9163 | 0.00018 | 0.77559 | 0.73981 | 2.0 | 0.85166 | 0.27554 |

Standard deviation of Adjusted Rand versus number of clusters gap: 0.90, Tp: 2.00, single link





Average values of five clustering indices gap: 1.00, Tp: 2.00, single link

| k | AR | FM | | AW | VD | Н | F | VI | V | Phi | RT | SS | CVNN | S | Dunn |
|----------|-----|---------|---------|---------|---------|---------|----------|----------|---------|---------|---------|---------|------|---------|---------|
| <u> </u> | | | J | | | | <u> </u> | | K | | | | | | Dunn |
| 2.0 | 1.0 | 0.99911 | 0.99821 | 0.72399 | 0.00045 | 0.72399 | 0.9991 | 0.00064 | 0.99911 | 0.00456 | 0.99645 | 0.99645 | 2.0 | 0.73399 | 0.41231 |
| 3.0 | 1.0 | 0.99823 | 0.99647 | 0.741 | 0.00088 | 0.8246 | 0.99823 | -0.01515 | 0.99824 | 0.00296 | 0.99304 | 0.99301 | 2.0 | 0.80315 | 0.38838 |
| 4.0 | 1.0 | 0.99583 | 0.9917 | 0.66006 | 0.00207 | 0.76704 | 0.99582 | -0.0386 | 0.99584 | 0.00186 | 0.98378 | 0.98362 | 2.0 | 0.82737 | 0.33889 |
| 5.0 | 1.0 | 0.99432 | 0.98872 | 0.72737 | 0.00287 | 0.78238 | 0.99431 | -0.09743 | 0.99432 | 0.00126 | 0.97821 | 0.97785 | 2.0 | 0.75959 | 0.31094 |
| 6.0 | 1.0 | 0.99341 | 0.98694 | 0.73098 | 0.0034 | 0.80369 | 0.99339 | -0.18622 | 0.99344 | 0.00106 | 0.97502 | 0.97448 | 2.0 | 0.79445 | 0.30684 |
| 7.0 | 1.0 | 0.99303 | 0.98621 | 0.76127 | 0.00379 | 0.83805 | 0.99299 | -0.28296 | 0.99308 | 0.00093 | 0.97398 | 0.9733 | 2.0 | 0.81906 | 0.30533 |
| 8.0 | 1.0 | 0.98944 | 0.97916 | 0.67868 | 0.00553 | 0.80181 | 0.98931 | -0.31916 | 0.98957 | 0.00082 | 0.96129 | 0.96026 | 2.0 | 0.89908 | 0.29571 |
| 9.0 | 1.0 | 0.98419 | 0.96892 | 0.6324 | 0.00795 | 0.76718 | 0.98393 | -0.41828 | 0.98445 | 0.00067 | 0.94332 | 0.94157 | 2.0 | 0.90827 | 0.28994 |
| 10.0 | 1.0 | 0.9746 | 0.95032 | 0.54703 | 0.01262 | 0.70457 | 0.97406 | -0.53517 | 0.97514 | 0.00052 | 0.91143 | 0.90824 | 2.0 | 0.89356 | 0.28138 |
| 11.0 | 1.0 | 0.96389 | 0.92983 | 0.48645 | 0.01787 | 0.65652 | 0.963 | -0.71584 | 0.96477 | 0.0004 | 0.87784 | 0.87236 | 2.0 | 0.86286 | 0.30235 |
| 12.0 | 1.0 | 0.97726 | 0.95581 | 0.80688 | 0.01211 | 0.82633 | 0.97697 | -1.90739 | 0.97755 | 0.00029 | 0.92523 | 0.91791 | 2.0 | 0.82262 | 0.29982 |
| 13.0 | 1.0 | 0.97877 | 0.95861 | 0.78616 | 0.01138 | 0.85457 | 0.97844 | -2.29551 | 0.97909 | 0.00028 | 0.9309 | 0.92283 | 2.0 | 0.82482 | 0.29733 |
| 14.0 | 1.0 | 0.97474 | 0.95092 | 0.74593 | 0.01278 | 0.84736 | 0.97413 | -2.61705 | 0.97535 | 0.00027 | 0.92008 | 0.9099 | 2.0 | 0.83955 | 0.29534 |
| 15.0 | 1.0 | 0.98199 | 0.96518 | 0.85444 | 0.00918 | 0.9056 | 0.98153 | -3.43908 | 0.98245 | 0.00026 | 0.94515 | 0.93646 | 2.0 | 0.80567 | 0.29344 |
| 16.0 | 1.0 | 0.97654 | 0.95509 | 0.82674 | 0.01181 | 0.89228 | 0.97569 | -3.80759 | 0.97741 | 0.00025 | 0.93164 | 0.92052 | 2.0 | 0.81735 | 0.28312 |
| 17.0 | 1.0 | 0.96966 | 0.94246 | 0.79666 | 0.01528 | 0.87432 | 0.96827 | -4.2257 | 0.97107 | 0.00024 | 0.91485 | 0.90097 | 2.0 | 0.82769 | 0.28176 |
| 18.0 | 1.0 | 0.963 | 0.93024 | 0.76957 | 0.01879 | 0.85871 | 0.96103 | -4.69431 | 0.965 | 0.00023 | 0.89908 | 0.88241 | 2.0 | 0.83618 | 0.28089 |
| 19.0 | 1.0 | 0.95228 | 0.91117 | 0.73407 | 0.02465 | 0.83394 | 0.94922 | -5.06348 | 0.95543 | 0.00021 | 0.87529 | 0.85462 | 2.0 | 0.84352 | 0.27623 |
| 20.0 | 1.0 | 0.93404 | 0.87801 | 0.66611 | 0.03417 | 0.78944 | 0.92931 | -5.52332 | 0.93889 | 0.0002 | 0.83317 | 0.80518 | 2.0 | 0.85095 | 0.27418 |

Standard deviation of Adjusted Rand versus number of clusters gap: 1.00, Tp: 2.00, single link

