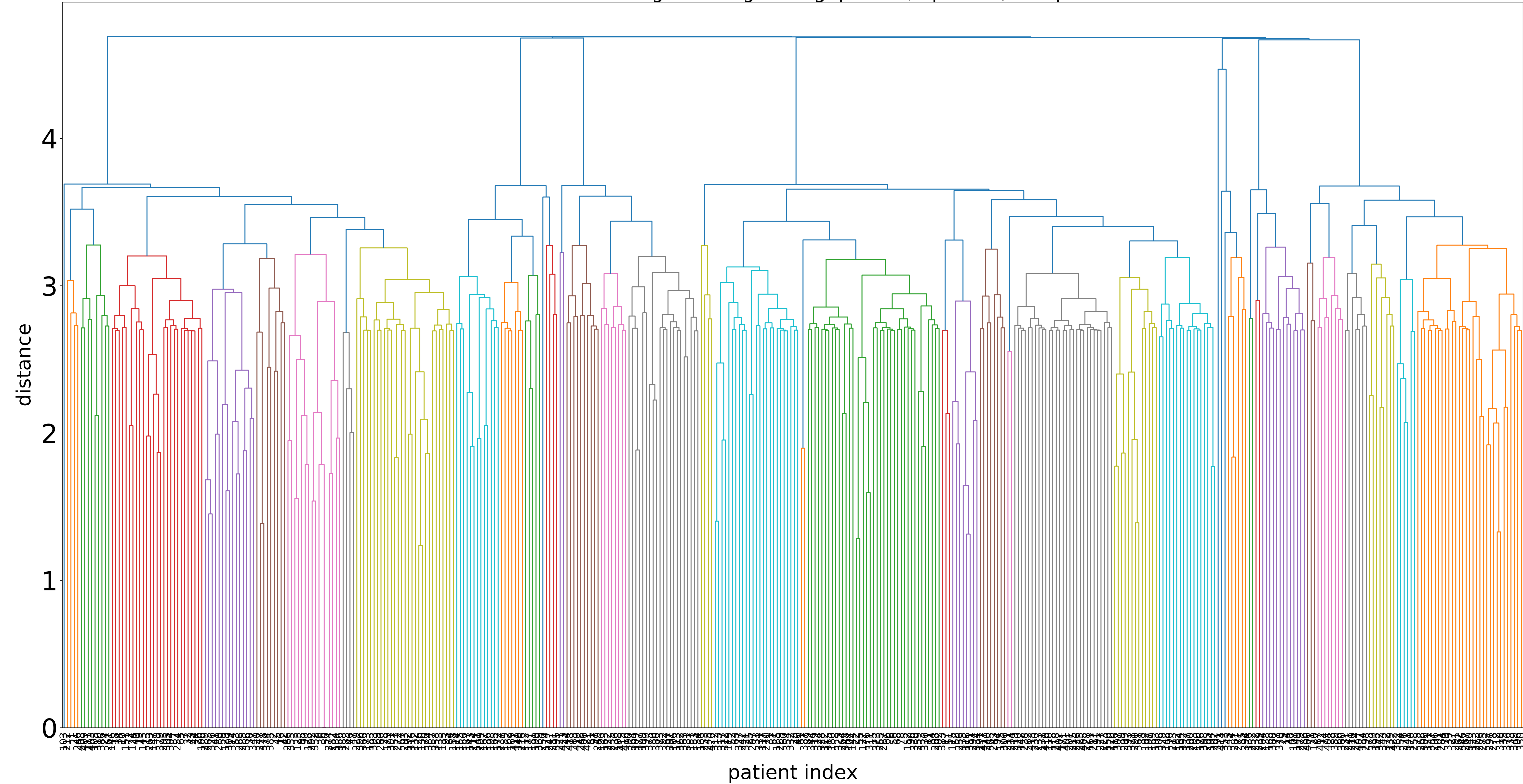Hierarchical Clustering Dendrogram - gap: 0.00, Tp: 1.00, complete link
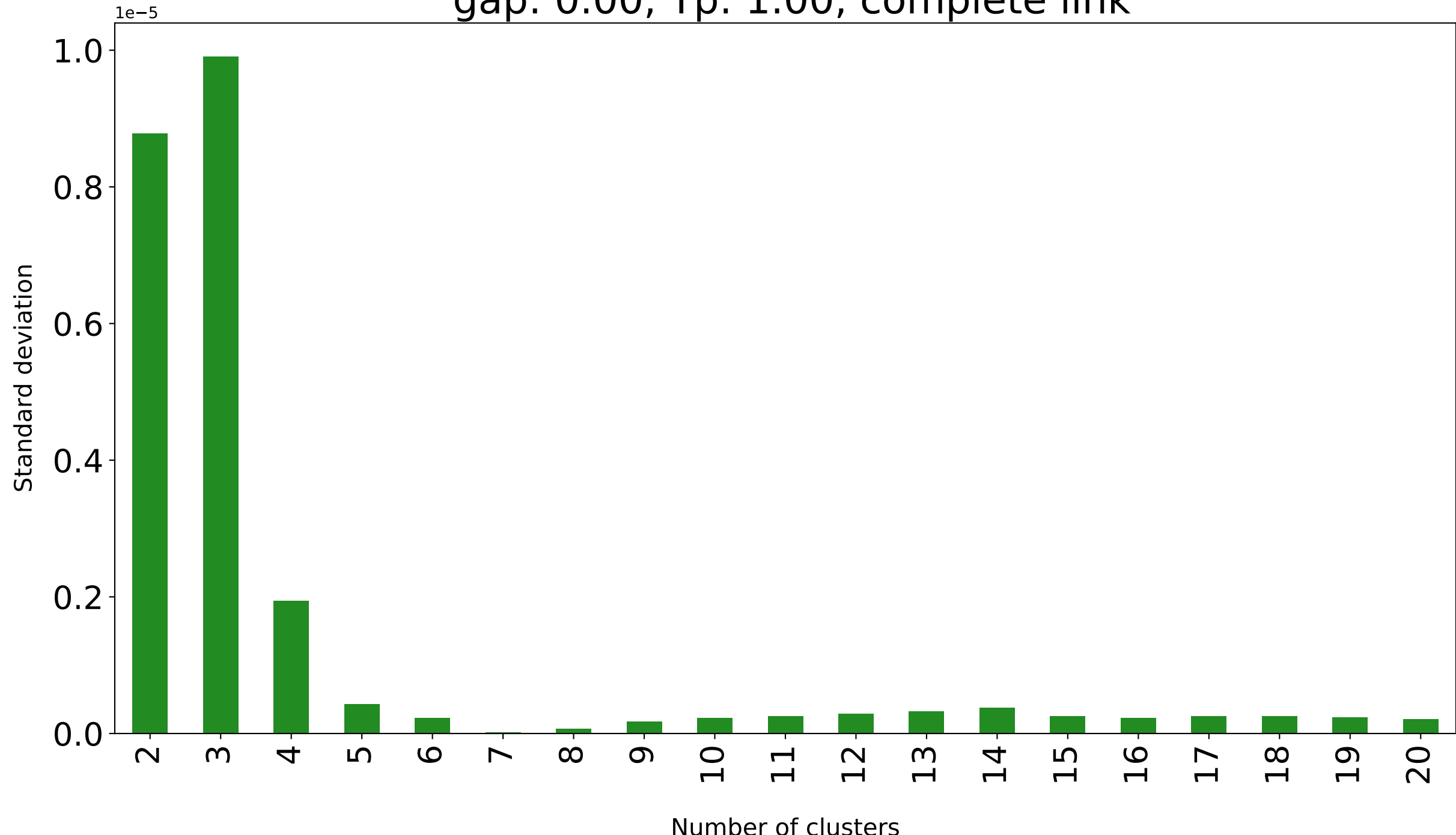
patient index

Cophenetic Correlation Coefficient: 0.8398792508489002

# Average values of five clustering indices
## gap: 0.00, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.8919 | 0.83384 | 0.6769 | 0.0665 | 0.69659 | 0.8907 | -0.10933 | 0.8931 | 0.00011 | 0.80249 | 0.77373 | 0.01548 | 0.1657 | 0.40407 |
| 3.0 | 1.0 | 0.90097 | 0.84305 | 0.86162 | 0.06623 | 0.82769 | 0.89925 | -0.65693 | 0.90272 | 0.00013 | 0.85955 | 0.77834 | 0.02176 | 0.15855 | 0.40433 |
| 4.0 | 1.0 | 0.91418 | 0.84974 | 0.94709 | 0.06258 | 0.87813 | 0.91046 | -1.48895 | 0.91797 | 0.00017 | 0.90055 | 0.77031 | 0.06742 | 0.17787 | 0.40473 |
| 5.0 | 1.0 | 0.97293 | 0.94947 | 0.97055 | 0.01989 | 0.96348 | 0.97279 | -2.76521 | 0.97307 | 0.0002 | 0.97279 | 0.91114 | 0.06742 | 0.21051 | 0.40518 |
| 6.0 | 1.0 | 0.97814 | 0.95811 | 0.96685 | 0.01848 | 0.97104 | 0.97809 | -3.38246 | 0.97819 | 0.00021 | 0.97893 | 0.92292 | 0.22222 | 0.20717 | 0.40582 |
| 7.0 | 1.0 | 0.99921 | 0.99843 | 0.99827 | 0.00086 | 0.99897 | 0.99921 | -4.60729 | 0.99921 | 0.00022 | 0.99926 | 0.99689 | 0.22222 | 0.22078 | 0.42388 |
| 8.0 | 1.0 | 0.99681 | 0.99369 | 0.99192 | 0.0021 | 0.99587 | 0.99677 | -5.98523 | 0.99685 | 0.00022 | 0.99707 | 0.98792 | 2.0 | 0.3139 | 0.51343 |
| 9.0 | 1.0 | 0.98113 | 0.9631 | 0.95412 | 0.00917 | 0.97584 | 0.98073 | -7.21261 | 0.98153 | 0.00022 | 0.9831 | 0.93165 | 2.0 | 0.38127 | 0.51395 |
| 10.0 | 1.0 | 0.96714 | 0.93662 | 0.92764 | 0.01725 | 0.95844 | 0.96631 | -8.60741 | 0.96796 | 0.00022 | 0.97182 | 0.886 | 2.0 | 0.34958 | 0.51466 |
| 11.0 | 1.0 | 0.95894 | 0.92116 | 0.90539 | 0.02338 | 0.94838 | 0.95767 | -10.0284 | 0.96022 | 0.00022 | 0.96528 | 0.86039 | 2.0 | 0.3199 | 0.51508 |
| 12.0 | 1.0 | 0.94217 | 0.89021 | 0.86979 | 0.03507 | 0.92781 | 0.94002 | -11.42859 | 0.94434 | 0.00022 | 0.95215 | 0.81042 | 2.0 | 0.29241 | 0.51532 |
| 13.0 | 1.0 | 0.92344 | 0.85697 | 0.83724 | 0.04645 | 0.90561 | 0.92014 | -12.63989 | 0.92678 | 0.00022 | 0.93952 | 0.76051 | 2.0 | 0.2718 | 0.5165 |
| 14.0 | 1.0 | 0.9112 | 0.83734 | 0.82402 | 0.05331 | 0.89276 | 0.90683 | -13.79383 | 0.91564 | 0.00023 | 0.93563 | 0.73735 | 2.0 | 0.25746 | 0.51829 |
| 15.0 | 1.0 | 0.84359 | 0.72849 | 0.85838 | 0.09576 | 0.81608 | 0.84098 | -14.98347 | 0.84622 | 0.00025 | 0.90771 | 0.57821 | 2.0 | 0.2403 | 0.4618 |
| 16.0 | 1.0 | 0.84653 | 0.73463 | 0.83113 | 0.09465 | 0.82044 | 0.84517 | -16.68922 | 0.84789 | 0.00026 | 0.91334 | 0.58554 | 2.0 | 0.23697 | 0.46253 |
| 17.0 | 1.0 | 0.84367 | 0.73158 | 0.83653 | 0.09813 | 0.8187 | 0.84228 | -18.00128 | 0.84507 | 0.00027 | 0.91629 | 0.58378 | 2.0 | 0.22638 | 0.46294 |
| 18.0 | 1.0 | 0.83091 | 0.71362 | 0.7967 | 0.10543 | 0.80495 | 0.82952 | -19.77056 | 0.83231 | 0.00027 | 0.91292 | 0.5626 | 2.0 | 0.26758 | 0.4673 |
| 19.0 | 1.0 | 0.81578 | 0.69167 | 0.76577 | 0.11255 | 0.78907 | 0.81391 | -21.49862 | 0.81766 | 0.00028 | 0.9095 | 0.53685 | 2.0 | 0.25901 | 0.46769 |
| 20.0 | 1.0 | 0.74213 | 0.59179 | 0.72665 | 0.14282 | 0.70975 | 0.74032 | -22.3261 | 0.74395 | 0.00028 | 0.88987 | 0.42512 | 2.0 | 0.24548 | 0.46806 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.00, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 0.10, Tp: 1.00, complete link
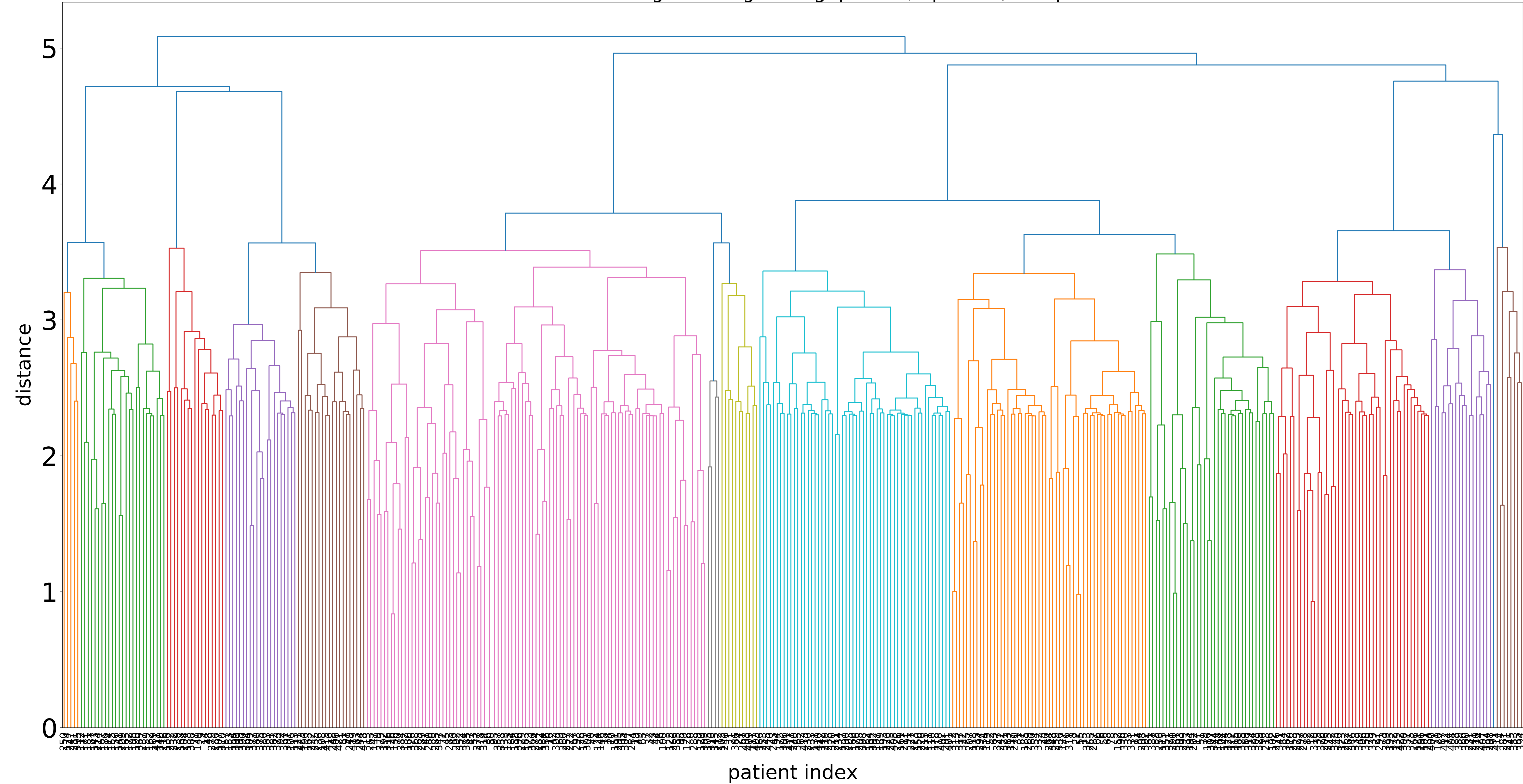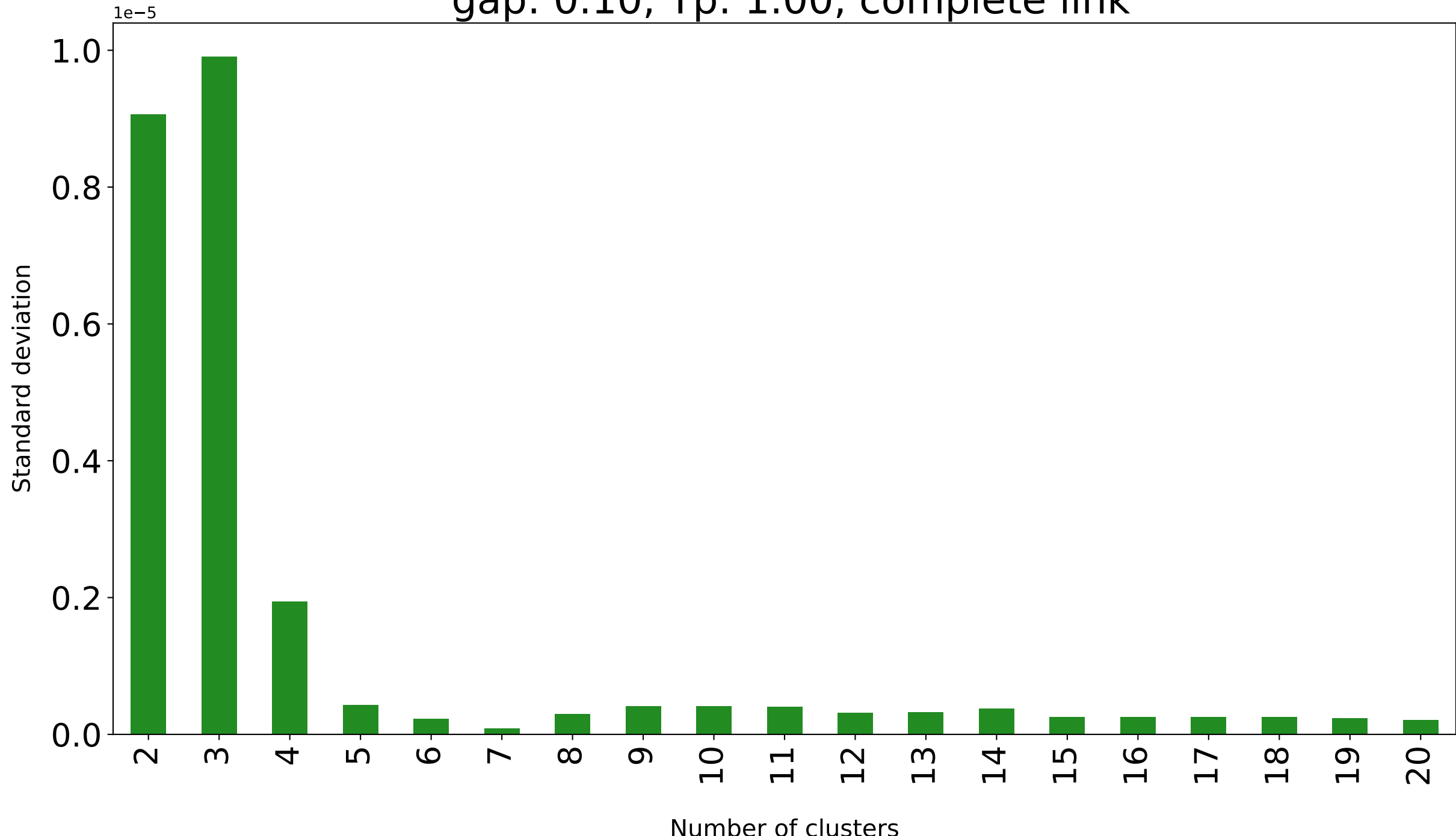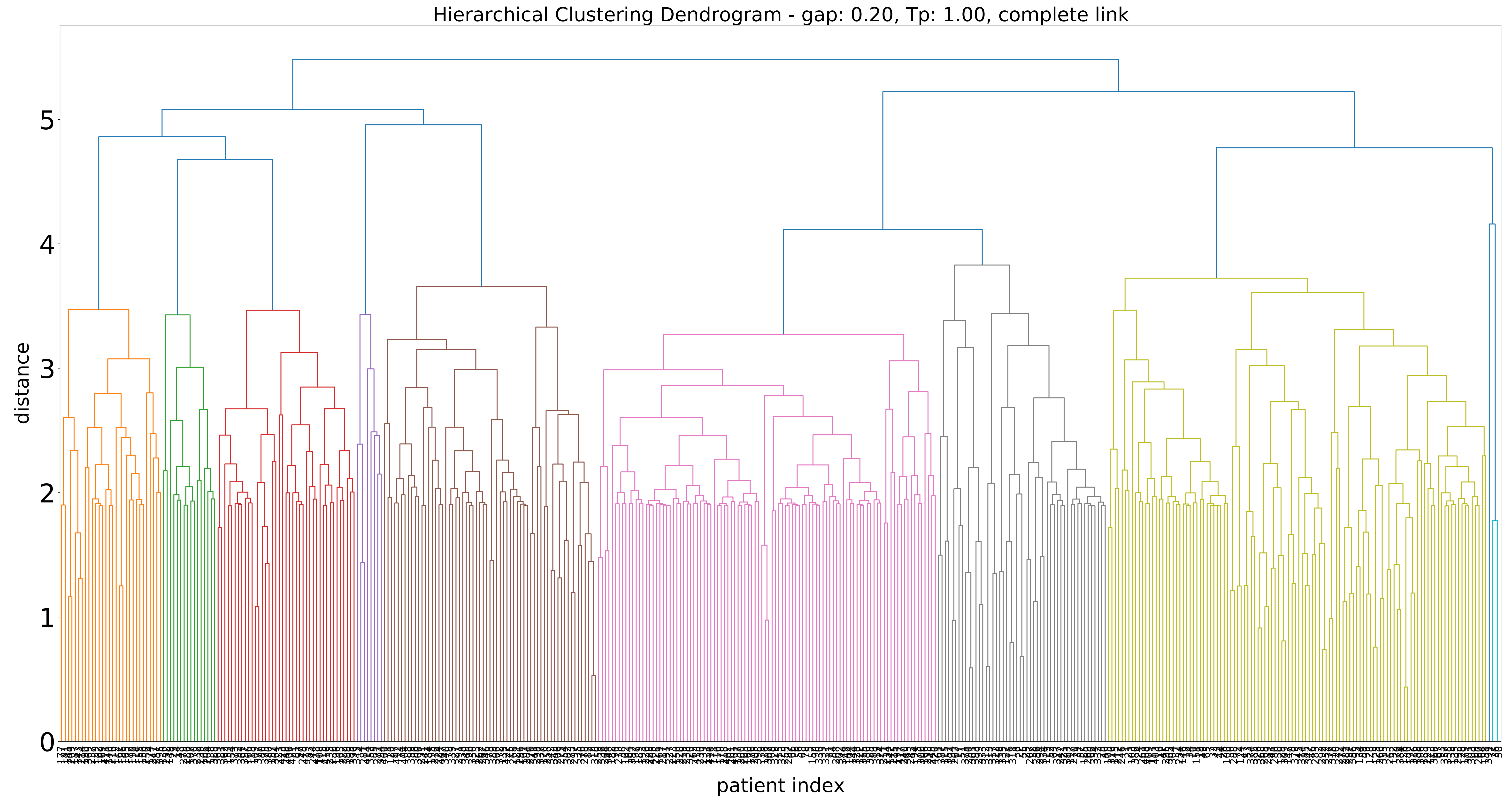
Cophenetic Correlation Coefficient: 0.8584020352113543

# Average values of five clustering indices
## gap: 0.10, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.8267 | 0.72628 | 0.52719 | 0.12482 | 0.57068 | 0.82323 | 0.12998 | 0.8302 | 0.0001 | 0.684 | 0.61915 | 0.01364 | 0.11741 | 0.36166 |
| 3.0 | 1.00001 | 0.83533 | 0.74692 | 0.73175 | 0.10225 | 0.72714 | 0.83428 | -0.54808 | 0.8364 | 0.00012 | 0.78917 | 0.65294 | 0.01818 | 0.18253 | 0.36567 |
| 4.0 | 1.0 | 0.97038 | 0.94445 | 0.97034 | 0.0191 | 0.95916 | 0.97014 | -1.63317 | 0.97063 | 0.00019 | 0.9683 | 0.9014 | 0.02778 | 0.22094 | 0.37482 |
| 5.0 | 1.0 | 0.96317 | 0.93033 | 0.9378 | 0.03156 | 0.95042 | 0.963 | -2.15269 | 0.96333 | 0.0002 | 0.96299 | 0.87488 | 0.22222 | 0.22932 | 0.37797 |
| 6.0 | 1.0 | 0.9723 | 0.94664 | 0.9669 | 0.02818 | 0.96343 | 0.97225 | -3.31354 | 0.97236 | 0.00021 | 0.97354 | 0.90085 | 0.22222 | 0.24669 | 0.381 |
| 7.0 | 1.0 | 0.99528 | 0.99074 | 0.99467 | 0.00497 | 0.99384 | 0.99527 | -4.56444 | 0.99529 | 0.00022 | 0.99561 | 0.98224 | 0.22222 | 0.26735 | 0.40861 |
| 8.0 | 1.0 | 0.98201 | 0.96591 | 0.95812 | 0.00995 | 0.97754 | 0.98108 | -5.97072 | 0.98295 | 0.00022 | 0.98476 | 0.94255 | 2.0 | 0.3546 | 0.45974 |
| 9.0 | 1.0 | 0.86258 | 0.76102 | 0.87823 | 0.07579 | 0.83214 | 0.86004 | -6.80772 | 0.86514 | 0.00022 | 0.90238 | 0.62832 | 2.0 | 0.30685 | 0.47097 |
| 10.0 | 1.0 | 0.83626 | 0.72443 | 0.8322 | 0.09208 | 0.80436 | 0.83447 | -7.53818 | 0.83806 | 0.00023 | 0.8975 | 0.58414 | 2.0 | 0.27215 | 0.48767 |
| 11.0 | 1.0 | 0.82429 | 0.70818 | 0.80404 | 0.10035 | 0.79302 | 0.82263 | -8.80846 | 0.82595 | 0.00024 | 0.89845 | 0.56456 | 2.0 | 0.2468 | 0.49123 |
| 12.0 | 1.0 | 0.80543 | 0.67794 | 0.82345 | 0.1216 | 0.77585 | 0.80299 | -9.8118 | 0.80789 | 0.00027 | 0.90037 | 0.52297 | 2.0 | 0.22387 | 0.39599 |
| 13.0 | 1.0 | 0.80625 | 0.68023 | 0.8017 | 0.12704 | 0.77804 | 0.80477 | -11.62194 | 0.80774 | 0.00028 | 0.90526 | 0.52527 | 2.0 | 0.20405 | 0.39656 |
| 14.0 | 1.0 | 0.79954 | 0.67168 | 0.77373 | 0.1338 | 0.77137 | 0.79834 | -13.11149 | 0.80074 | 0.00028 | 0.90535 | 0.51596 | 2.0 | 0.19775 | 0.39659 |
| 15.0 | 1.0 | 0.78401 | 0.65068 | 0.75428 | 0.14025 | 0.75525 | 0.78267 | -14.74599 | 0.78537 | 0.00028 | 0.90273 | 0.49261 | 2.0 | 0.18585 | 0.40022 |
| 16.0 | 1.0 | 0.76526 | 0.62463 | 0.70814 | 0.14716 | 0.73515 | 0.76327 | -16.5366 | 0.76726 | 0.00028 | 0.89748 | 0.46387 | 2.0 | 0.23249 | 0.4008 |
| 17.0 | 1.0 | 0.75602 | 0.61086 | 0.679 | 0.15008 | 0.72577 | 0.75313 | -18.33543 | 0.75893 | 0.00029 | 0.89586 | 0.44856 | 2.0 | 0.22932 | 0.40294 |
| 18.0 | 1.0 | 0.71697 | 0.56162 | 0.70437 | 0.17274 | 0.68693 | 0.71562 | -19.18433 | 0.71834 | 0.00031 | 0.89617 | 0.39526 | 2.0 | 0.21846 | 0.40577 |
| 19.0 | 1.0 | 0.71823 | 0.56396 | 0.68847 | 0.17396 | 0.68979 | 0.7172 | -20.66619 | 0.71926 | 0.00033 | 0.90128 | 0.39809 | 2.0 | 0.21417 | 0.41737 |
| 20.0 | 1.0 | 0.70237 | 0.54415 | 0.69953 | 0.18184 | 0.67515 | 0.70122 | -21.6369 | 0.70354 | 0.00035 | 0.90437 | 0.37814 | 2.0 | 0.20604 | 0.4198 |

**Standard deviation of Adjusted Rand versus number of clusters**
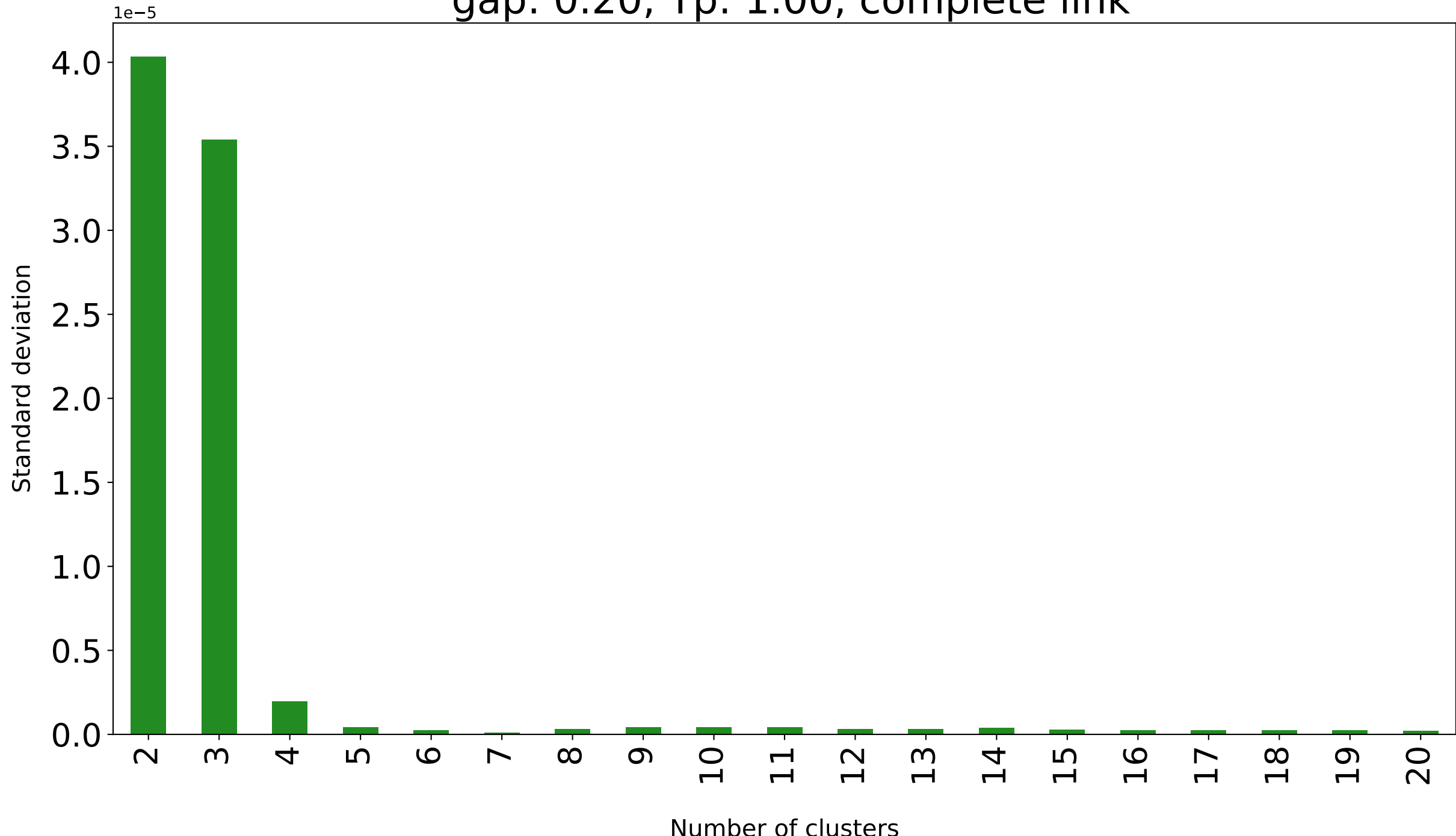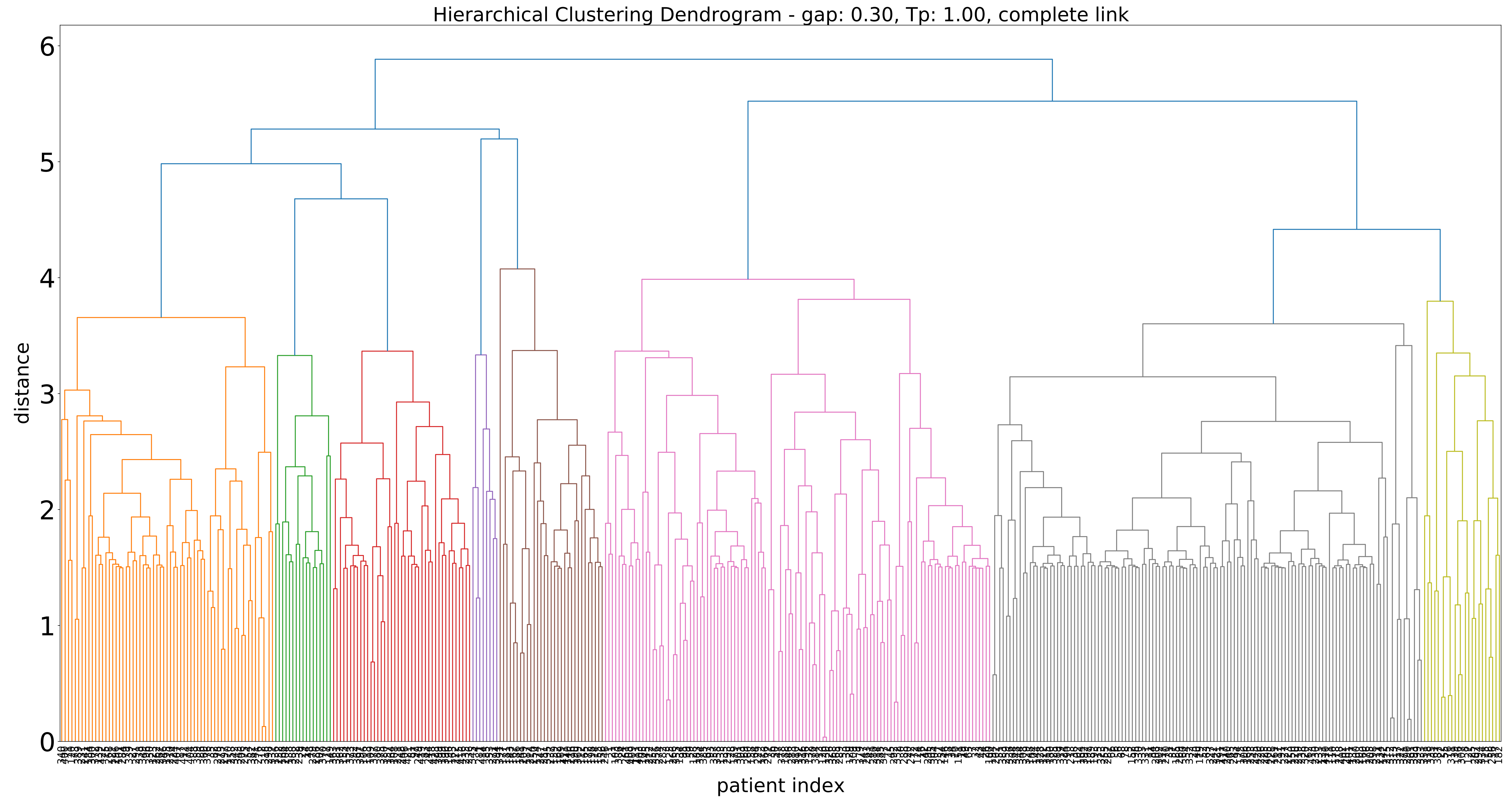gap: 0.10, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 0.20, Tp: 1.00, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.830811222278848

## Average values of five clustering indices
## gap: 0.20, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99998 | 0.8657 | 0.80079 | 0.71264 | 0.10185 | 0.7031 | 0.86476 | -0.01093 | 0.86666 | 0.00011 | 0.78682 | 0.73322 | 0.01266 | 0.13532 | 0.30313 |
| 3.0 | 1.00001 | 0.84375 | 0.75257 | 0.79824 | 0.10756 | 0.75117 | 0.84138 | -0.5388 | 0.84615 | 0.00013 | 0.80339 | 0.65228 | 0.01266 | 0.24253 | 0.31151 |
| 4.0 | 1.0 | 0.96362 | 0.93374 | 0.96493 | 0.02323 | 0.94918 | 0.96281 | -1.5931 | 0.96446 | 0.00019 | 0.95978 | 0.88828 | 0.02299 | 0.25608 | 0.31935 |
| 5.0 | 1.0 | 0.96425 | 0.93179 | 0.93575 | 0.02803 | 0.95189 | 0.96407 | -2.11617 | 0.96442 | 0.0002 | 0.96392 | 0.87591 | 0.02299 | 0.27911 | 0.32568 |
| 6.0 | 1.0 | 0.96881 | 0.94042 | 0.95513 | 0.0293 | 0.95882 | 0.96877 | -3.26593 | 0.96886 | 0.00021 | 0.97036 | 0.8906 | 0.06667 | 0.29737 | 0.33173 |
| 7.0 | 1.0 | 0.97503 | 0.95142 | 0.95535 | 0.02771 | 0.96736 | 0.97495 | -4.53148 | 0.9751 | 0.00021 | 0.97675 | 0.90828 | 0.5 | 0.27109 | 0.19297 |
| 8.0 | 1.0 | 0.98319 | 0.96771 | 0.96862 | 0.01038 | 0.97863 | 0.98275 | -5.61508 | 0.98363 | 0.00022 | 0.98534 | 0.94209 | 0.5 | 0.2883 | 0.21711 |
| 9.0 | 1.0 | 0.93781 | 0.88322 | 0.86307 | 0.03004 | 0.92227 | 0.93506 | -6.97586 | 0.9406 | 0.00021 | 0.94794 | 0.80371 | 2.0 | 0.39751 | 0.21938 |
| 10.0 | 1.0 | 0.82571 | 0.70512 | 0.8138 | 0.09223 | 0.78834 | 0.82395 | -7.70686 | 0.82748 | 0.00021 | 0.88235 | 0.55198 | 2.0 | 0.34619 | 0.23581 |
| 11.0 | 1.0 | 0.78666 | 0.65038 | 0.7362 | 0.11568 | 0.74415 | 0.78489 | -8.76225 | 0.78844 | 0.00021 | 0.86616 | 0.48846 | 2.0 | 0.32733 | 0.24247 |
| 12.0 | 1.0 | 0.72835 | 0.57288 | 0.70904 | 0.16955 | 0.68335 | 0.72623 | -9.22394 | 0.73048 | 0.00022 | 0.85457 | 0.40449 | 2.0 | 0.29153 | 0.247 |
| 13.0 | 1.0 | 0.70618 | 0.54691 | 0.67486 | 0.18391 | 0.6623 | 0.70448 | -10.21231 | 0.7079 | 0.00023 | 0.85663 | 0.37964 | 2.0 | 0.26535 | 0.25017 |
| 14.0 | 1.0 | 0.68274 | 0.52011 | 0.66734 | 0.20625 | 0.6407 | 0.68099 | -10.67483 | 0.6845 | 0.00024 | 0.86039 | 0.35529 | 2.0 | 0.25143 | 0.26014 |
| 15.0 | 1.0 | 0.66771 | 0.50364 | 0.63614 | 0.21927 | 0.62544 | 0.66629 | -12.35688 | 0.66914 | 0.00024 | 0.85946 | 0.34053 | 2.0 | 0.23541 | 0.26053 |
| 16.0 | 1.0 | 0.66178 | 0.49699 | 0.62019 | 0.22381 | 0.62011 | 0.66026 | -13.88411 | 0.66331 | 0.00025 | 0.86081 | 0.33464 | 2.0 | 0.23469 | 0.26054 |
| 17.0 | 1.0 | 0.65231 | 0.48648 | 0.61221 | 0.22667 | 0.61147 | 0.65071 | -15.4894 | 0.65392 | 0.00025 | 0.86264 | 0.32538 | 2.0 | 0.21903 | 0.26249 |
| 18.0 | 1.0 | 0.65171 | 0.48577 | 0.60322 | 0.22771 | 0.61205 | 0.64998 | -17.24283 | 0.65344 | 0.00026 | 0.86587 | 0.32486 | 2.0 | 0.22108 | 0.263 |
| 19.0 | 1.0 | 0.65321 | 0.48692 | 0.58942 | 0.22662 | 0.61491 | 0.65104 | -18.66615 | 0.6554 | 0.00027 | 0.86942 | 0.32589 | 2.0 | 0.21578 | 0.26339 |
| 20.0 | 1.0 | 0.65345 | 0.48646 | 0.576 | 0.22597 | 0.61639 | 0.65046 | -20.53773 | 0.65646 | 0.00027 | 0.87231 | 0.32569 | 2.0 | 0.21261 | 0.26676 |

Standard deviation of Adjusted Rand versus number of clusters
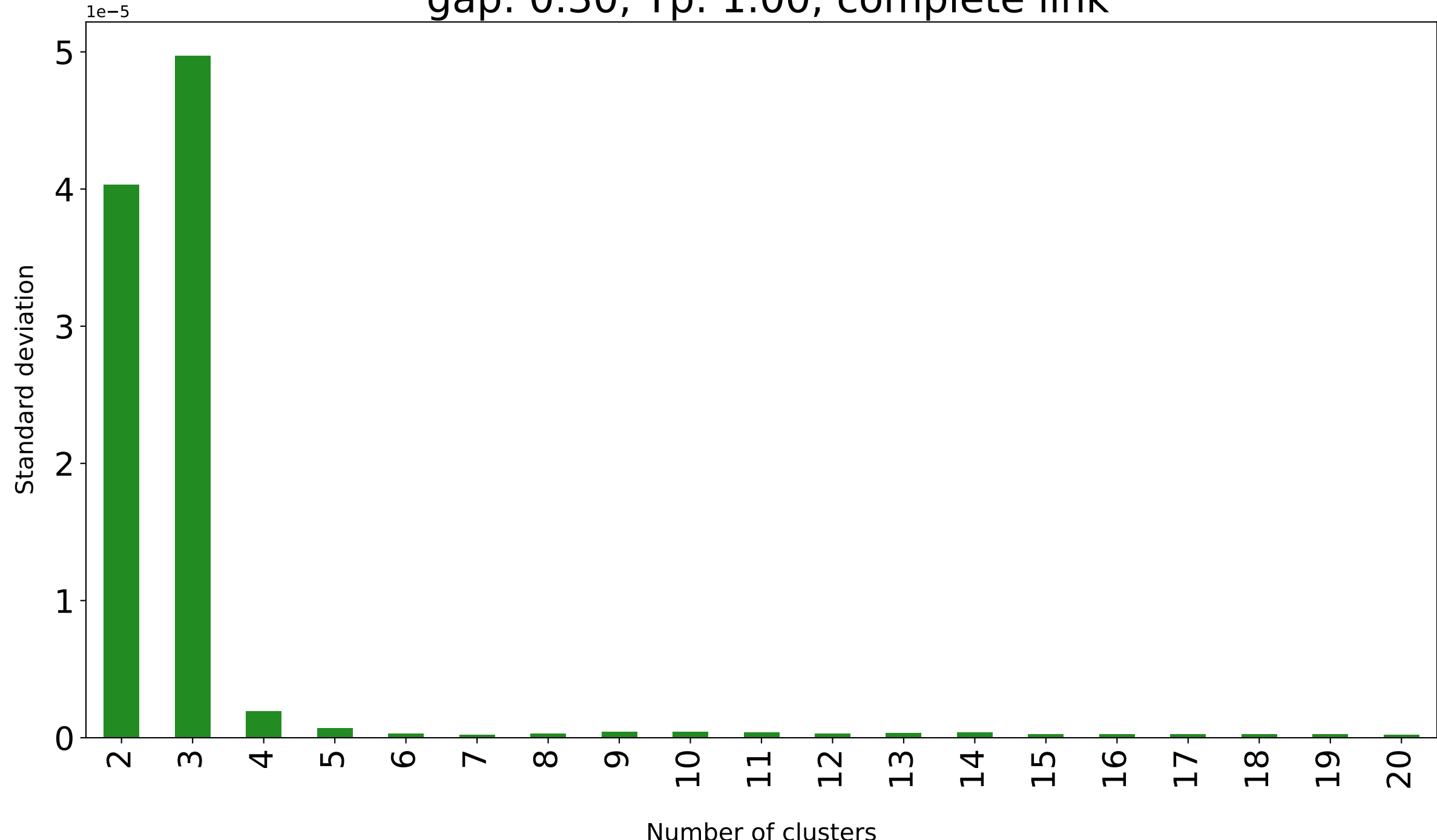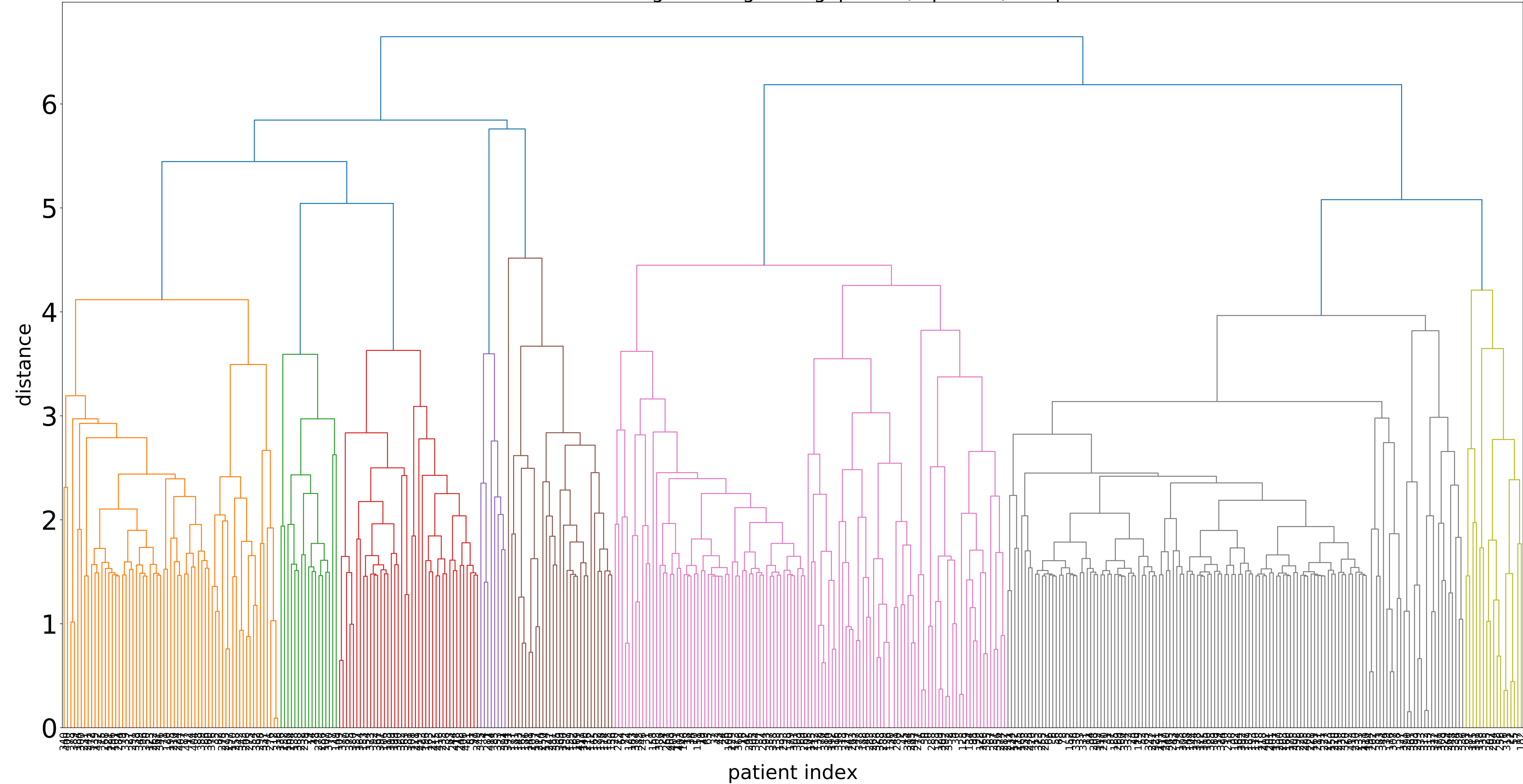gap: 0.20, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 0.30, Tp: 1.00, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.8137785865921857

# Average values of five clustering indices
## gap: 0.30, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.8997 | 0.8476 | 0.77498 | 0.07352 | 0.76603 | 0.89815 | -0.08019 | 0.9013 | 0.00012 | 0.83257 | 0.79381 | 0.025 | 0.15802 | 0.25045 |
| 3.0 | 1.0 | 0.90466 | 0.8461 | 0.88685 | 0.06413 | 0.84698 | 0.90228 | -0.6976 | 0.90709 | 0.00015 | 0.87532 | 0.78119 | 0.025 | 0.2803 | 0.26185 |
| 4.0 | 1.0 | 0.88992 | 0.80665 | 0.83617 | 0.09852 | 0.84601 | 0.88895 | -1.25772 | 0.89091 | 0.00016 | 0.88263 | 0.69011 | 0.05128 | 0.27626 | 0.26615 |
| 5.0 | 1.0 | 0.90854 | 0.83446 | 0.82781 | 0.08035 | 0.87516 | 0.90739 | -2.12232 | 0.9097 | 0.00017 | 0.90583 | 0.72567 | 0.06452 | 0.32032 | 0.27757 |
| 6.0 | 1.0 | 0.97274 | 0.94822 | 0.96713 | 0.02703 | 0.96394 | 0.97265 | -3.33554 | 0.97282 | 0.00021 | 0.97398 | 0.90572 | 0.06452 | 0.33719 | 0.29553 |
| 7.0 | 1.0 | 0.98685 | 0.97492 | 0.98114 | 0.01109 | 0.98291 | 0.98677 | -4.51266 | 0.98694 | 0.00022 | 0.98803 | 0.95422 | 0.11765 | 0.36656 | 0.31315 |
| 8.0 | 1.0 | 0.93522 | 0.8779 | 0.95886 | 0.03308 | 0.91842 | 0.93417 | -5.26899 | 0.93627 | 0.00022 | 0.94657 | 0.78619 | 0.11765 | 0.31513 | 0.31024 |
| 9.0 | 1.0 | 0.92156 | 0.85642 | 0.91043 | 0.04221 | 0.9022 | 0.92062 | -6.75004 | 0.9225 | 0.00022 | 0.93893 | 0.75713 | 2.0 | 0.38385 | 0.3172 |
| 10.0 | 1.0 | 0.84186 | 0.72553 | 0.86707 | 0.10411 | 0.80878 | 0.83945 | -7.03333 | 0.84428 | 0.00022 | 0.8932 | 0.57296 | 2.0 | 0.33175 | 0.24456 |
| 11.0 | 1.0 | 0.82791 | 0.70672 | 0.84889 | 0.11526 | 0.79498 | 0.82569 | -7.5154 | 0.83015 | 0.00023 | 0.89283 | 0.55205 | 2.0 | 0.3128 | 0.118 |
| 12.0 | 1.0 | 0.80705 | 0.67805 | 0.7899 | 0.1277 | 0.77179 | 0.80561 | -9.0624 | 0.80851 | 0.00023 | 0.88617 | 0.51806 | 2.0 | 0.30388 | 0.12254 |
| 13.0 | 1.0 | 0.78559 | 0.65005 | 0.75494 | 0.13416 | 0.75008 | 0.78406 | -10.27768 | 0.78712 | 0.00024 | 0.884 | 0.48835 | 2.0 | 0.2811 | 0.12438 |
| 14.0 | 1.0 | 0.79739 | 0.66675 | 0.78097 | 0.1404 | 0.76707 | 0.79593 | -12.009 | 0.79886 | 0.00026 | 0.89876 | 0.50738 | 2.0 | 0.28022 | 0.13122 |
| 15.0 | 1.0 | 0.79479 | 0.66349 | 0.75447 | 0.14512 | 0.76518 | 0.79333 | -13.84545 | 0.79625 | 0.00027 | 0.90062 | 0.50408 | 2.0 | 0.29027 | 0.13289 |
| 16.0 | 1.0 | 0.7879 | 0.65397 | 0.73824 | 0.1547 | 0.75831 | 0.78628 | -15.56095 | 0.78953 | 0.00027 | 0.90016 | 0.4934 | 2.0 | 0.27465 | 0.13309 |
| 17.0 | 1.0 | 0.78339 | 0.6486 | 0.73693 | 0.1612 | 0.75439 | 0.78169 | -16.15955 | 0.7851 | 0.00028 | 0.90158 | 0.4884 | 2.0 | 0.26742 | 0.1331 |
| 18.0 | 1.0 | 0.77924 | 0.6434 | 0.7377 | 0.16289 | 0.75083 | 0.77757 | -17.8702 | 0.78093 | 0.00029 | 0.90306 | 0.48302 | 2.0 | 0.2507 | 0.13374 |
| 19.0 | 1.0 | 0.77781 | 0.64169 | 0.72518 | 0.16218 | 0.7499 | 0.77569 | -19.40007 | 0.77996 | 0.00029 | 0.9041 | 0.48224 | 2.0 | 0.25129 | 0.13439 |
| 20.0 | 1.0 | 0.77618 | 0.63924 | 0.71273 | 0.1615 | 0.74869 | 0.77349 | -20.84547 | 0.77891 | 0.00029 | 0.90475 | 0.48024 | 2.0 | 0.24956 | 0.1346 |

**Standard deviation of Adjusted Rand versus number of clusters**
gap: 0.30, Tp: 1.00, complete link

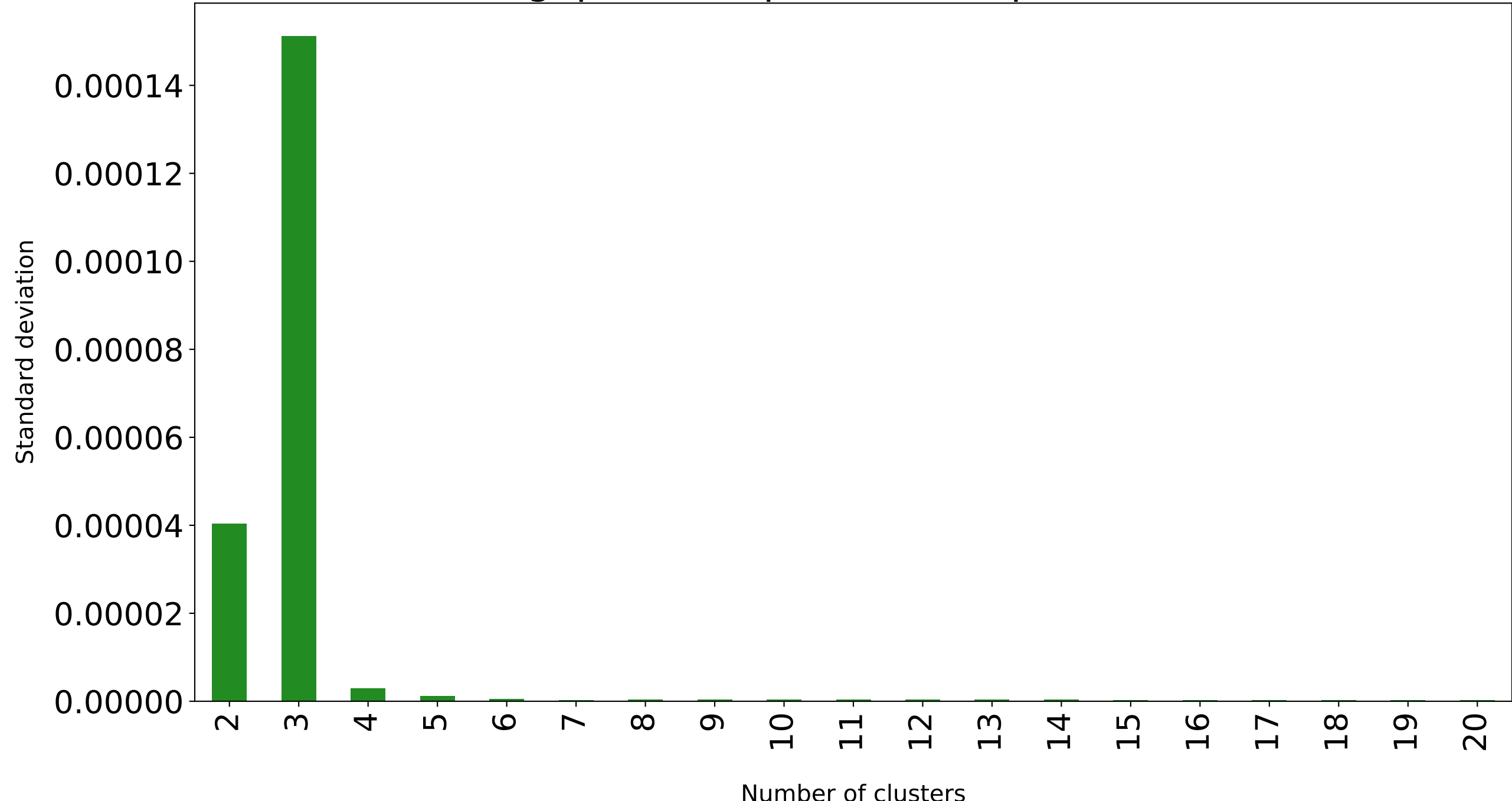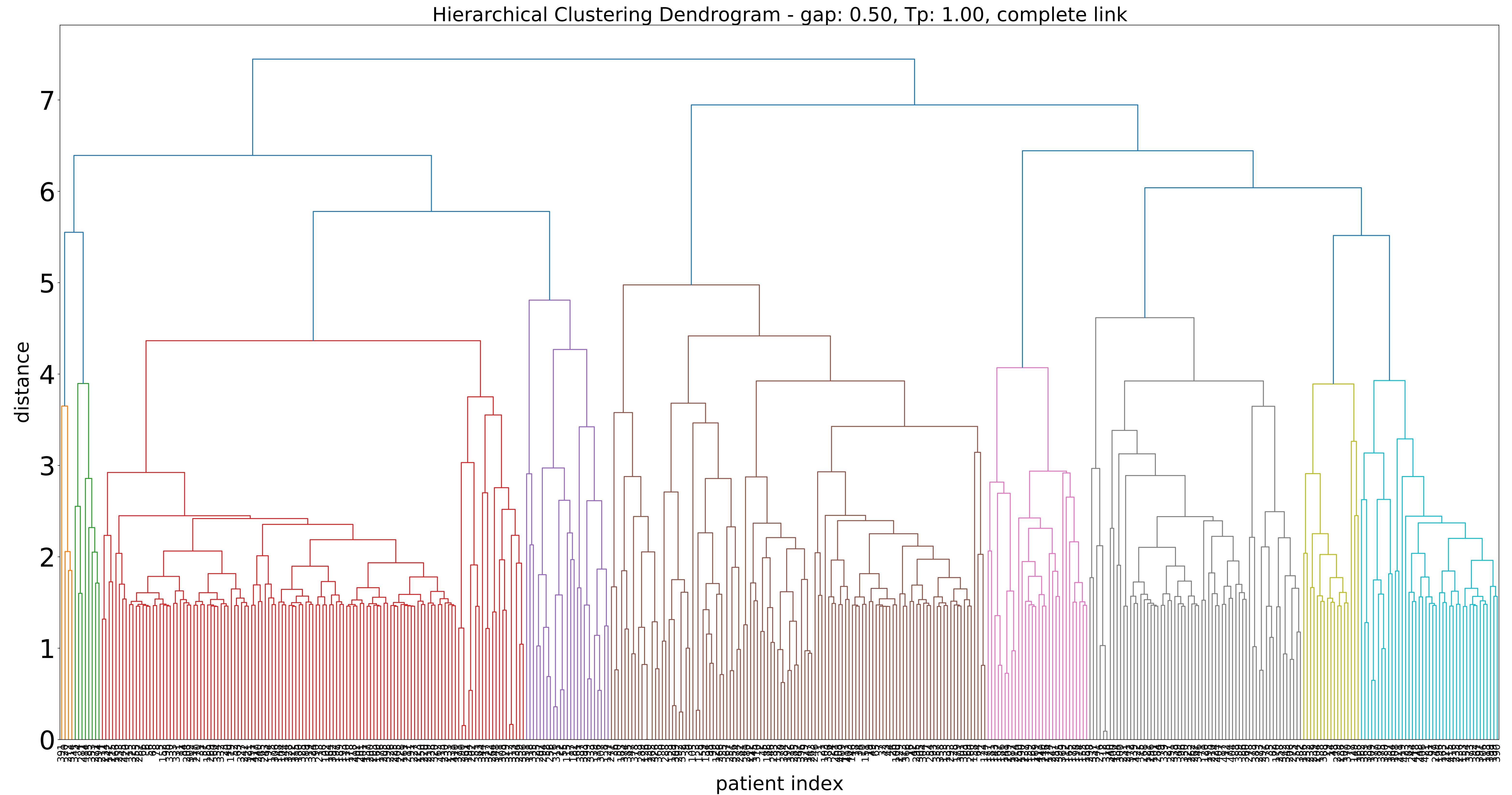Hierarchical Clustering Dendrogram - gap: 0.40, Tp: 1.00, complete link

Cophenetic Correlation Coefficient: 0.8017789716899641

# Average values of five clustering indices
## gap: 0.40, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99998 | 0.87195 | 0.80385 | 0.68893 | 0.09349 | 0.68498 | 0.86876 | -0.02487 | 0.87527 | 0.00011 | 0.77952 | 0.73464 | 0.025 | 0.16531 | 0.24995 |
| 3.0 | 1.00001 | 0.89012 | 0.82277 | 0.87067 | 0.07356 | 0.82098 | 0.88658 | -0.66142 | 0.89377 | 0.00014 | 0.85341 | 0.74834 | 0.025 | 0.2876 | 0.26451 |
| 4.0 | 1.0 | 0.86878 | 0.77534 | 0.81914 | 0.11191 | 0.81371 | 0.867 | -1.17623 | 0.87059 | 0.00016 | 0.85763 | 0.6514 | 0.05128 | 0.28304 | 0.26843 |
| 5.0 | 1.0 | 0.89682 | 0.81676 | 0.81629 | 0.08711 | 0.85828 | 0.89556 | -2.07579 | 0.89809 | 0.00017 | 0.89365 | 0.70284 | 0.06452 | 0.32865 | 0.2839 |
| 6.0 | 1.0 | 0.96174 | 0.92901 | 0.94836 | 0.02933 | 0.94958 | 0.96142 | -3.29147 | 0.96206 | 0.0002 | 0.96408 | 0.87594 | 0.06452 | 0.34606 | 0.30436 |
| 7.0 | 1.0 | 0.93325 | 0.87557 | 0.94225 | 0.04163 | 0.91433 | 0.93267 | -4.40002 | 0.93384 | 0.00021 | 0.9421 | 0.78306 | 0.06452 | 0.3052 | 0.24756 |
| 8.0 | 1.0 | 0.95055 | 0.90679 | 0.95544 | 0.02838 | 0.93734 | 0.95009 | -5.52287 | 0.95102 | 0.00022 | 0.95873 | 0.83466 | 0.11765 | 0.33992 | 0.27638 |
| 9.0 | 1.0 | 0.93358 | 0.87648 | 0.90013 | 0.03732 | 0.91699 | 0.93256 | -7.01164 | 0.9346 | 0.00022 | 0.94722 | 0.78733 | 2.0 | 0.40532 | 0.28061 |
| 10.0 | 1.0 | 0.87467 | 0.7777 | 0.89923 | 0.08379 | 0.84733 | 0.87276 | -7.44116 | 0.87659 | 0.00023 | 0.91188 | 0.64306 | 2.0 | 0.36166 | 0.234 |
| 11.0 | 1.0 | 0.8658 | 0.76478 | 0.88336 | 0.09187 | 0.83857 | 0.86419 | -7.88355 | 0.86742 | 0.00023 | 0.91178 | 0.62636 | 2.0 | 0.35013 | 0.2256 |
| 12.0 | 1.0 | 0.85186 | 0.74429 | 0.83475 | 0.10059 | 0.82304 | 0.85087 | -9.192 | 0.85286 | 0.00024 | 0.90722 | 0.59952 | 2.0 | 0.33231 | 0.23066 |
| 13.0 | 1.0 | 0.83844 | 0.72385 | 0.81148 | 0.09985 | 0.80961 | 0.83727 | -10.33281 | 0.83961 | 0.00025 | 0.90584 | 0.57356 | 2.0 | 0.30983 | 0.23949 |
| 14.0 | 1.0 | 0.86232 | 0.75836 | 0.88519 | 0.0988 | 0.84094 | 0.86056 | -12.08867 | 0.86408 | 0.00028 | 0.92697 | 0.61644 | 2.0 | 0.29984 | 0.24839 |
| 15.0 | 1.0 | 0.87121 | 0.77405 | 0.87239 | 0.09584 | 0.85185 | 0.8703 | -13.63644 | 0.87213 | 0.00029 | 0.93422 | 0.63816 | 2.0 | 0.31795 | 0.24866 |
| 16.0 | 1.0 | 0.87431 | 0.7792 | 0.85984 | 0.09813 | 0.85591 | 0.87357 | -15.63007 | 0.87505 | 0.0003 | 0.93736 | 0.64517 | 2.0 | 0.3145 | 0.25876 |
| 17.0 | 1.0 | 0.87269 | 0.7767 | 0.84812 | 0.10425 | 0.85464 | 0.87192 | -17.52918 | 0.87347 | 0.00031 | 0.93825 | 0.64193 | 2.0 | 0.30021 | 0.26036 |
| 18.0 | 1.0 | 0.87389 | 0.77807 | 0.83491 | 0.10594 | 0.85645 | 0.87285 | -19.38103 | 0.87493 | 0.00031 | 0.93987 | 0.64356 | 2.0 | 0.28481 | 0.23398 |
| 19.0 | 1.0 | 0.87731 | 0.78359 | 0.84611 | 0.10351 | 0.86092 | 0.87645 | -21.21696 | 0.87817 | 0.00032 | 0.94325 | 0.65066 | 2.0 | 0.26766 | 0.23456 |
| 20.0 | 1.0 | 0.88369 | 0.79407 | 0.85556 | 0.10118 | 0.86858 | 0.88288 | -22.69514 | 0.8845 | 0.00033 | 0.94744 | 0.66546 | 2.0 | 0.25984 | 0.23608 |

Standard deviation of Adjusted Rand versus number of clusters
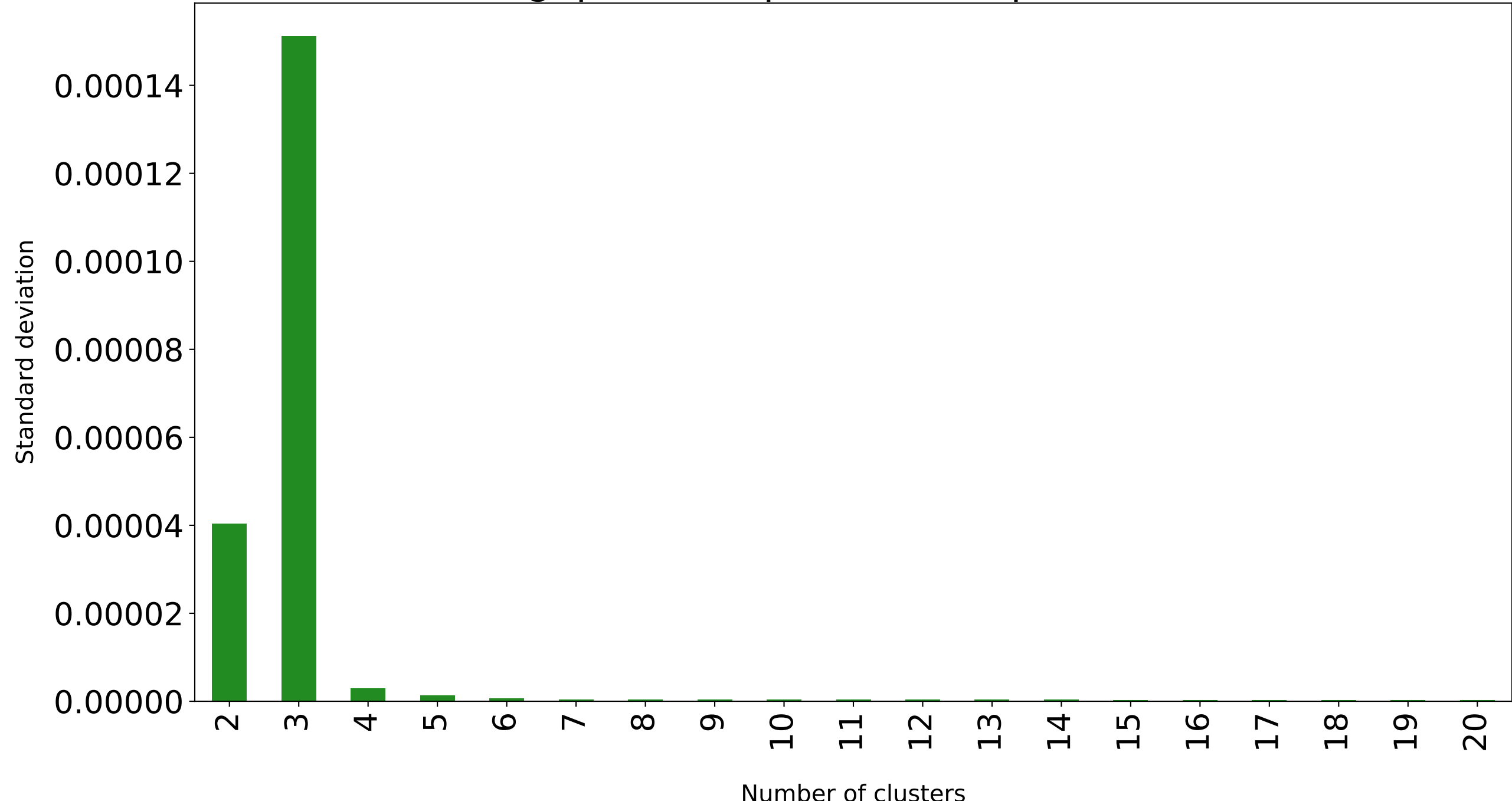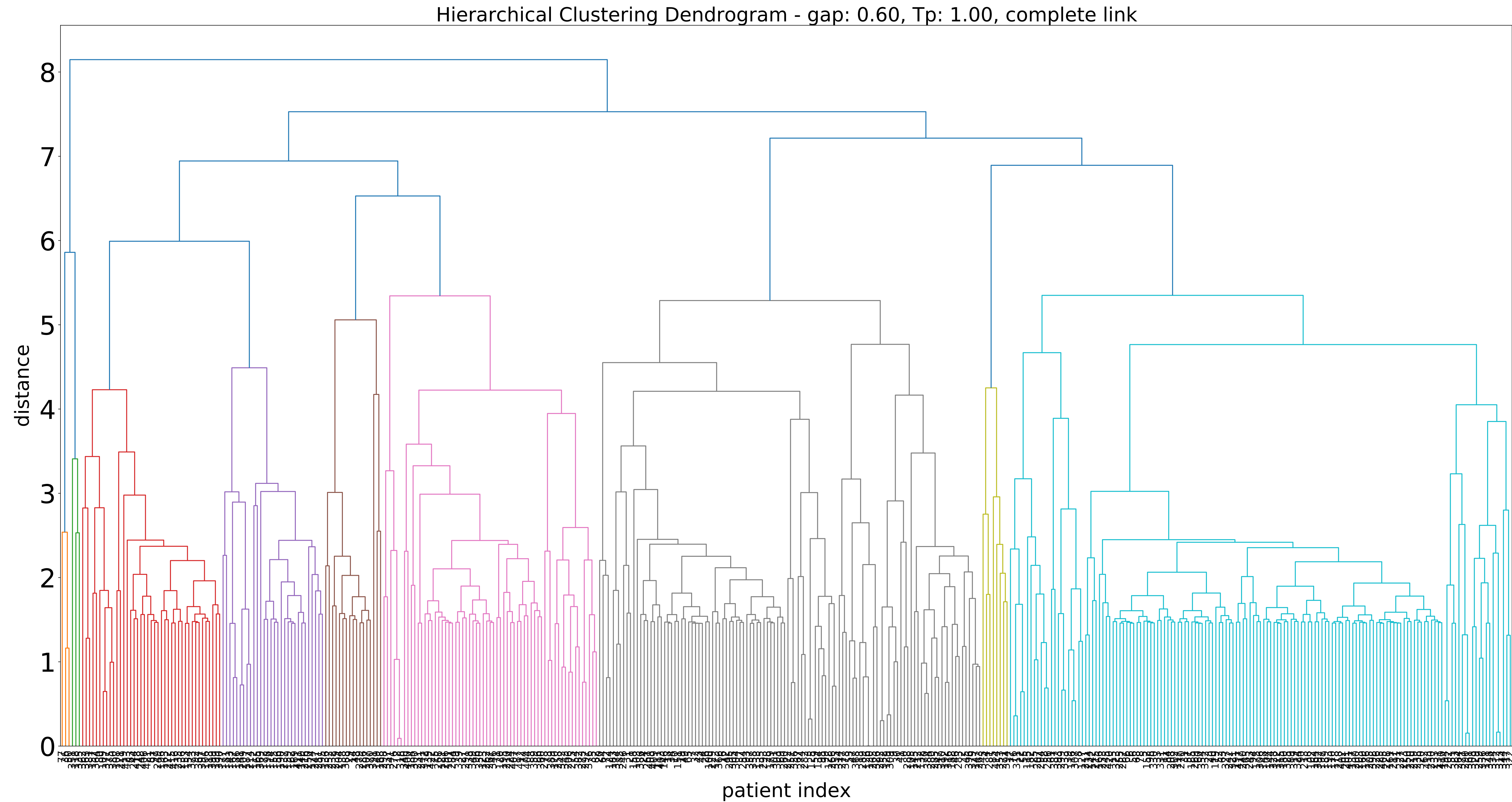gap: 0.40, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 0.50, Tp: 1.00, complete link

patient index

Cophenetic Correlation Coefficient: 0.7650088838074319

## Average values of five clustering indices
## gap: 0.50, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 2.0 | 0.99996 | 0.69112 | 0.54136 | 0.2954 | 0.22477 | 0.28303 | 0.68636 | 0.28703 | 0.69608 | 5e-05 | 0.49922 | 0.39922 | 0.05556 | 0.21687 | 0.15773 |
| 3.0 | 1.00001 | 0.83998 | 0.73695 | 0.81783 | 0.10252 | 0.74038 | 0.8346 | -0.5195 | 0.8455 | 0.00013 | 0.78324 | 0.61769 | 0.05556 | 0.27598 | 0.17001 |
| 4.0 | 1.0 | 0.82849 | 0.7143 | 0.7444 | 0.12623 | 0.75388 | 0.82684 | -1.32341 | 0.83015 | 0.00014 | 0.81382 | 0.57068 | 0.05556 | 0.31846 | 0.17137 |
| 5.0 | 1.0 | 0.86808 | 0.77359 | 0.79127 | 0.10705 | 0.81833 | 0.86707 | -1.94321 | 0.86909 | 0.00016 | 0.86681 | 0.64601 | 0.83333 | 0.27653 | 0.18141 |
| 6.0 | 1.0 | 0.93221 | 0.877 | 0.9193 | 0.0512 | 0.91066 | 0.93175 | -3.14255 | 0.93267 | 0.0002 | 0.93721 | 0.79196 | 0.83333 | 0.30452 | 0.18955 |
| 7.0 | 1.0 | 0.90636 | 0.82822 | 0.94046 | 0.06241 | 0.88112 | 0.90487 | -3.93452 | 0.90786 | 0.00021 | 0.92142 | 0.71129 | 0.83333 | 0.25549 | 0.19733 |
| 8.0 | 1.0 | 0.91171 | 0.83839 | 0.92107 | 0.05706 | 0.88844 | 0.91097 | -5.23779 | 0.91244 | 0.00021 | 0.92813 | 0.72619 | 2.0 | 0.25446 | 0.19858 |
| 9.0 | 1.0 | 0.91542 | 0.84511 | 0.91542 | 0.04661 | 0.89464 | 0.91464 | -6.37393 | 0.91621 | 0.00022 | 0.93462 | 0.7375 | 2.0 | 0.29332 | 0.22016 |
| 10.0 | 1.0 | 0.895 | 0.81134 | 0.90565 | 0.06072 | 0.87152 | 0.89381 | -7.40114 | 0.89621 | 0.00023 | 0.92484 | 0.68986 | 2.0 | 0.28688 | 0.22779 |
| 11.0 | 1.0 | 0.87944 | 0.78749 | 0.85426 | 0.0729 | 0.85361 | 0.87859 | -8.88762 | 0.88029 | 0.00023 | 0.91784 | 0.65767 | 2.0 | 0.27322 | 0.20558 |
| 12.0 | 1.0 | 0.8576 | 0.75285 | 0.80462 | 0.08872 | 0.82882 | 0.85645 | -9.2809 | 0.85875 | 0.00023 | 0.90773 | 0.61084 | 2.0 | 0.26162 | 0.21486 |
| 13.0 | 1.0 | 0.83964 | 0.7254 | 0.80612 | 0.10481 | 0.81064 | 0.83877 | -9.89674 | 0.84051 | 0.00024 | 0.90574 | 0.57443 | 2.0 | 0.25548 | 0.21744 |
| 14.0 | 1.0 | 0.85231 | 0.7433 | 0.86433 | 0.10606 | 0.82905 | 0.85108 | -11.45859 | 0.85354 | 0.00028 | 0.92164 | 0.59598 | 2.0 | 0.24257 | 0.22233 |
| 15.0 | 1.0 | 0.8606 | 0.75676 | 0.85655 | 0.10296 | 0.83928 | 0.85981 | -12.62166 | 0.86139 | 0.00029 | 0.92811 | 0.61382 | 2.0 | 0.24227 | 0.23321 |
| 16.0 | 1.0 | 0.85681 | 0.75113 | 0.84139 | 0.11126 | 0.83558 | 0.85619 | -14.47056 | 0.85742 | 0.00029 | 0.92831 | 0.60628 | 2.0 | 0.23245 | 0.24156 |
| 17.0 | 1.0 | 0.84674 | 0.73566 | 0.82652 | 0.12014 | 0.82483 | 0.84618 | -16.10993 | 0.8473 | 0.0003 | 0.9258 | 0.586 | 2.0 | 0.21135 | 0.24184 |
| 18.0 | 1.0 | 0.87483 | 0.77785 | 0.89194 | 0.10689 | 0.85828 | 0.87382 | -17.70881 | 0.87584 | 0.00033 | 0.94236 | 0.64014 | 2.0 | 0.20128 | 0.24185 |
| 19.0 | 1.0 | 0.89425 | 0.80766 | 0.93865 | 0.09801 | 0.88105 | 0.89241 | -19.5507 | 0.8961 | 0.00035 | 0.95254 | 0.68142 | 2.0 | 0.19444 | 0.24357 |
| 20.0 | 1.0 | 0.89956 | 0.81697 | 0.9353 | 0.09525 | 0.88712 | 0.89815 | -21.06518 | 0.90097 | 0.00036 | 0.95553 | 0.69451 | 2.0 | 0.20044 | 0.24389 |

Standard deviation of Adjusted Rand versus number of clusters
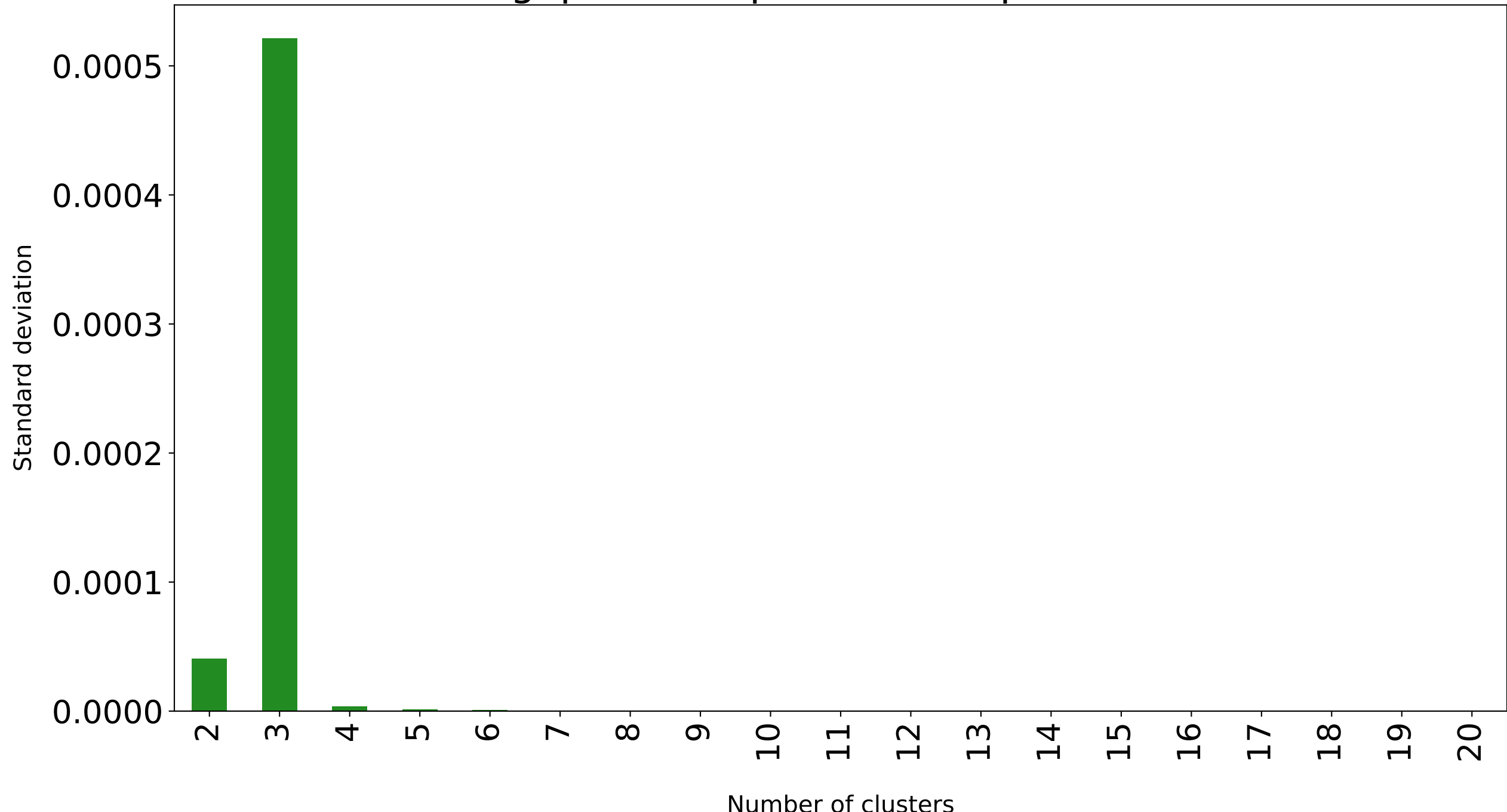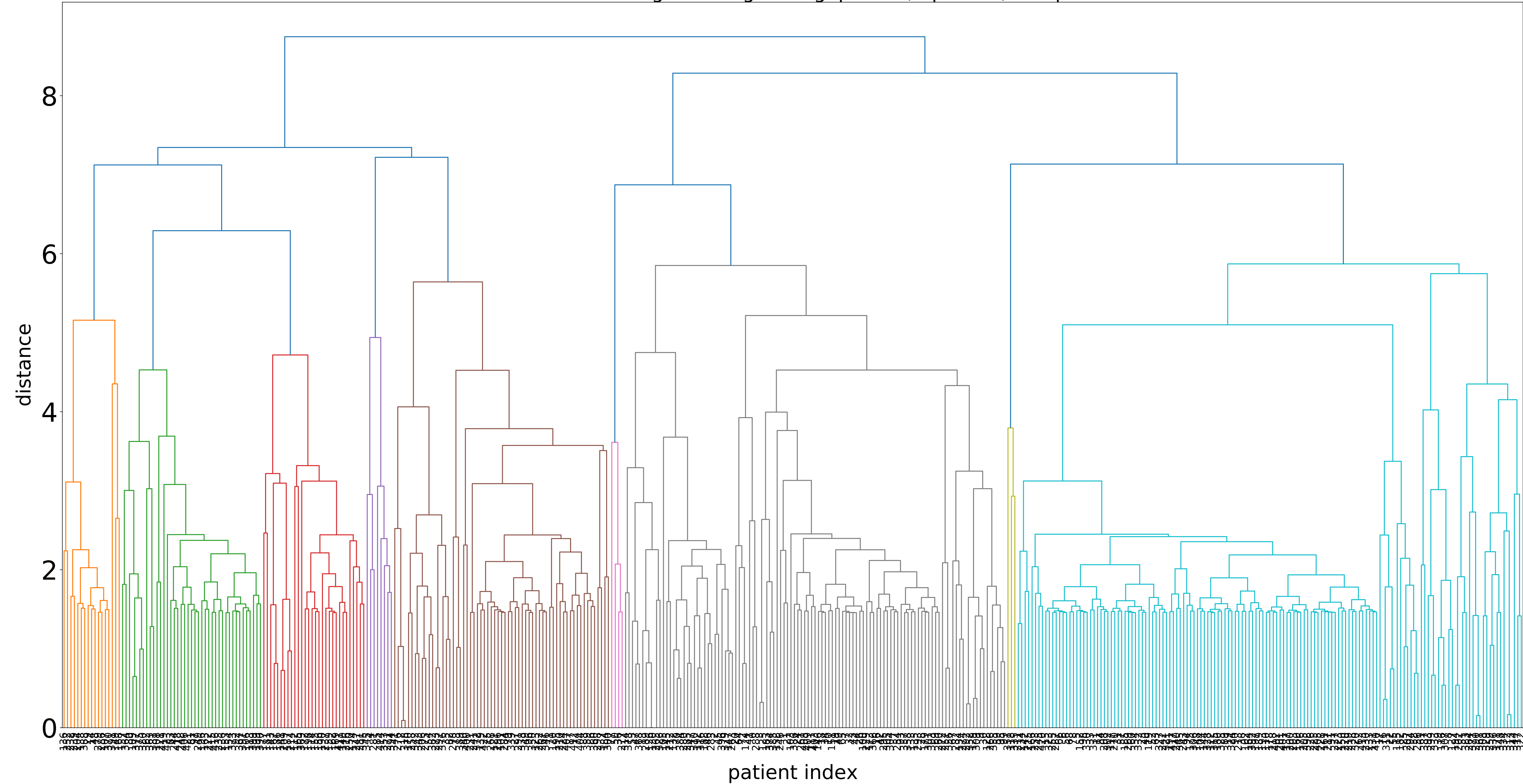gap: 0.50, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 0.60, Tp: 1.00, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.7908181533397525

## Average values of five clustering indices
## gap: 0.60, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.83919 | 0.72337 | 0.25113 | 0.10928 | 0.29694 | 0.82209 | 0.19089 | 0.85705 | 0.00034 | 0.61747 | 0.61358 | 1.07143 | 0.24865 | 0.13936 |
| 3.0 | 1.00002 | 0.68363 | 0.52192 | 0.30046 | 0.22736 | 0.38418 | 0.67509 | -0.0935 | 0.69237 | 6e-05 | 0.53326 | 0.36865 | 1.07143 | 0.16859 | 0.14541 |
| 4.0 | 1.0 | 0.80659 | 0.68162 | 0.68981 | 0.12884 | 0.71102 | 0.80367 | -1.33923 | 0.80954 | 0.00013 | 0.77428 | 0.53211 | 1.07143 | 0.23104 | 0.15109 |
| 5.0 | 1.0 | 0.87796 | 0.78763 | 0.83966 | 0.08473 | 0.83223 | 0.87684 | -2.26369 | 0.87908 | 0.00017 | 0.87598 | 0.66199 | 1.07143 | 0.25453 | 0.15221 |
| 6.0 | 1.0 | 0.91094 | 0.83974 | 0.86514 | 0.07098 | 0.88144 | 0.91022 | -2.92307 | 0.91167 | 0.00019 | 0.91525 | 0.73288 | 1.07143 | 0.27411 | 0.1607 |
| 7.0 | 1.0 | 0.94096 | 0.89094 | 0.89815 | 0.05091 | 0.92318 | 0.94044 | -4.1432 | 0.94148 | 0.0002 | 0.94673 | 0.81154 | 1.07143 | 0.29921 | 0.17511 |
| 8.0 | 1.0 | 0.95146 | 0.90953 | 0.91743 | 0.03301 | 0.93791 | 0.95094 | -5.45361 | 0.95199 | 0.00021 | 0.9583 | 0.84203 | 1.07143 | 0.33579 | 0.17904 |
| 9.0 | 1.0 | 0.94713 | 0.89985 | 0.8852 | 0.03002 | 0.93333 | 0.9457 | -6.90958 | 0.94856 | 0.00022 | 0.95535 | 0.82548 | 1.71429 | 0.3722 | 0.19613 |
| 10.0 | 1.0 | 0.90826 | 0.83463 | 0.88573 | 0.05188 | 0.8862 | 0.90753 | -7.82696 | 0.90898 | 0.00022 | 0.93095 | 0.7251 | 1.71429 | 0.31678 | 0.19635 |
| 11.0 | 1.0 | 0.87566 | 0.78169 | 0.81786 | 0.0714 | 0.84765 | 0.87441 | -8.55124 | 0.87692 | 0.00022 | 0.91164 | 0.65142 | 1.71429 | 0.3011 | 0.19841 |
| 12.0 | 1.0 | 0.85418 | 0.74776 | 0.84914 | 0.09348 | 0.82586 | 0.85305 | -9.29879 | 0.85531 | 0.00024 | 0.9086 | 0.60443 | 1.71429 | 0.28273 | 0.20741 |
| 13.0 | 1.0 | 0.84537 | 0.73434 | 0.80106 | 0.0989 | 0.81688 | 0.84419 | -10.9792 | 0.84655 | 0.00024 | 0.90737 | 0.58731 | 2.0 | 0.24561 | 0.22005 |
| 14.0 | 1.0 | 0.84373 | 0.73011 | 0.77949 | 0.09986 | 0.81668 | 0.84213 | -12.05413 | 0.84534 | 0.00025 | 0.91041 | 0.57988 | 2.0 | 0.23226 | 0.22017 |
| 15.0 | 1.0 | 0.88121 | 0.78922 | 0.8762 | 0.09352 | 0.86288 | 0.88048 | -13.8106 | 0.88194 | 0.00029 | 0.93793 | 0.65743 | 2.0 | 0.22045 | 0.2247 |
| 16.0 | 1.0 | 0.88856 | 0.80088 | 0.87373 | 0.08947 | 0.87181 | 0.88798 | -14.98971 | 0.88914 | 0.0003 | 0.94304 | 0.67289 | 2.0 | 0.22239 | 0.23052 |
| 17.0 | 1.0 | 0.88699 | 0.79837 | 0.87141 | 0.094 | 0.87048 | 0.88645 | -16.18791 | 0.88752 | 0.00031 | 0.94367 | 0.66931 | 2.0 | 0.22838 | 0.23368 |
| 18.0 | 1.0 | 0.88145 | 0.78962 | 0.85723 | 0.10041 | 0.86463 | 0.88093 | -18.04879 | 0.88197 | 0.00031 | 0.9425 | 0.65729 | 2.0 | 0.22313 | 0.24679 |
| 19.0 | 1.0 | 0.8755 | 0.77945 | 0.83574 | 0.10453 | 0.8582 | 0.87477 | -19.39448 | 0.87624 | 0.00032 | 0.94052 | 0.64262 | 2.0 | 0.2295 | 0.24807 |
| 20.0 | 1.0 | 0.87171 | 0.77339 | 0.83224 | 0.10681 | 0.85442 | 0.87102 | -21.13496 | 0.8724 | 0.00032 | 0.94039 | 0.63414 | 2.0 | 0.2127 | 0.24835 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.60, Tp: 1.00, complete link

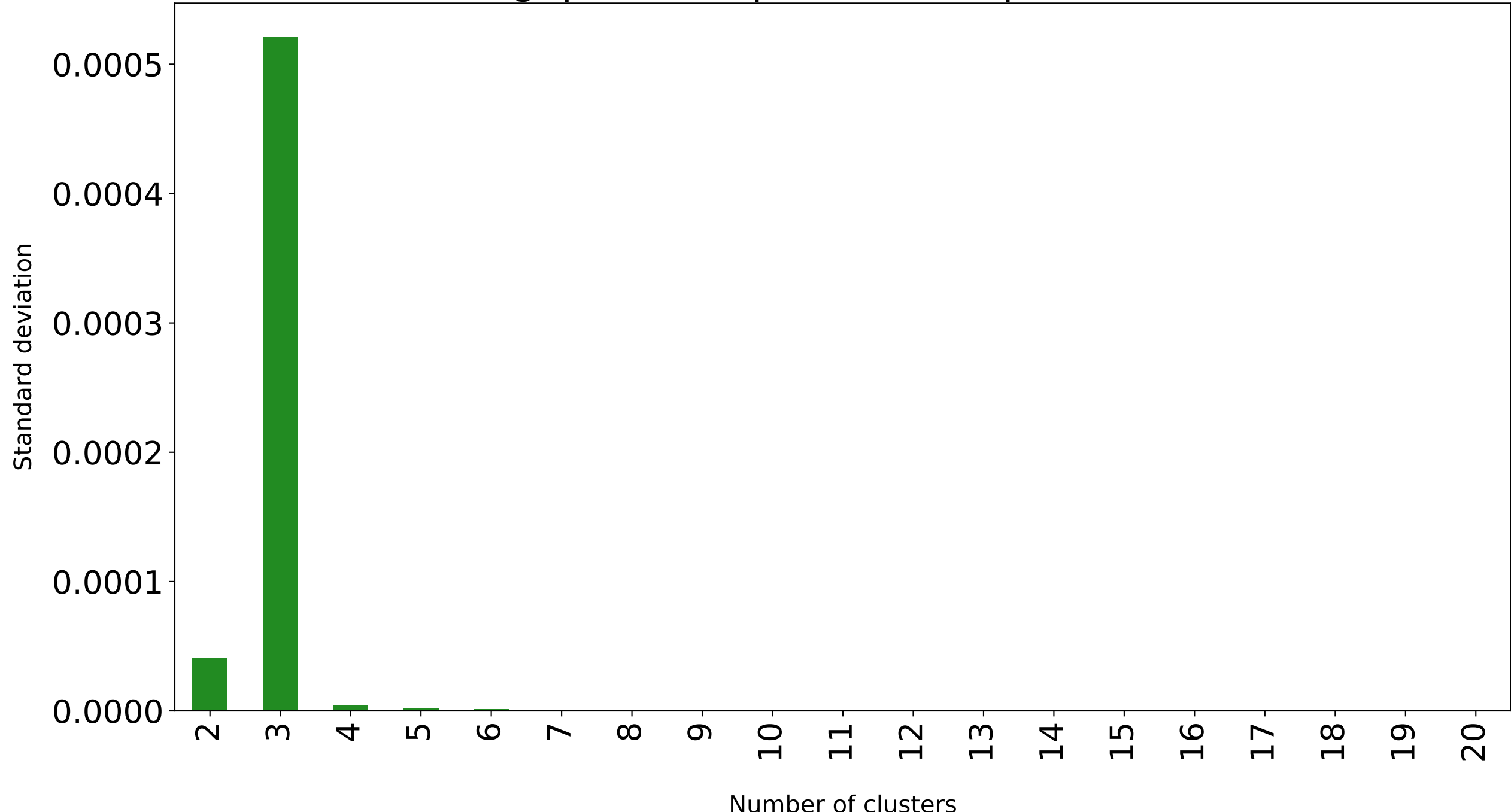Hierarchical Clustering Dendrogram - gap: 0.70, Tp: 1.00, complete link

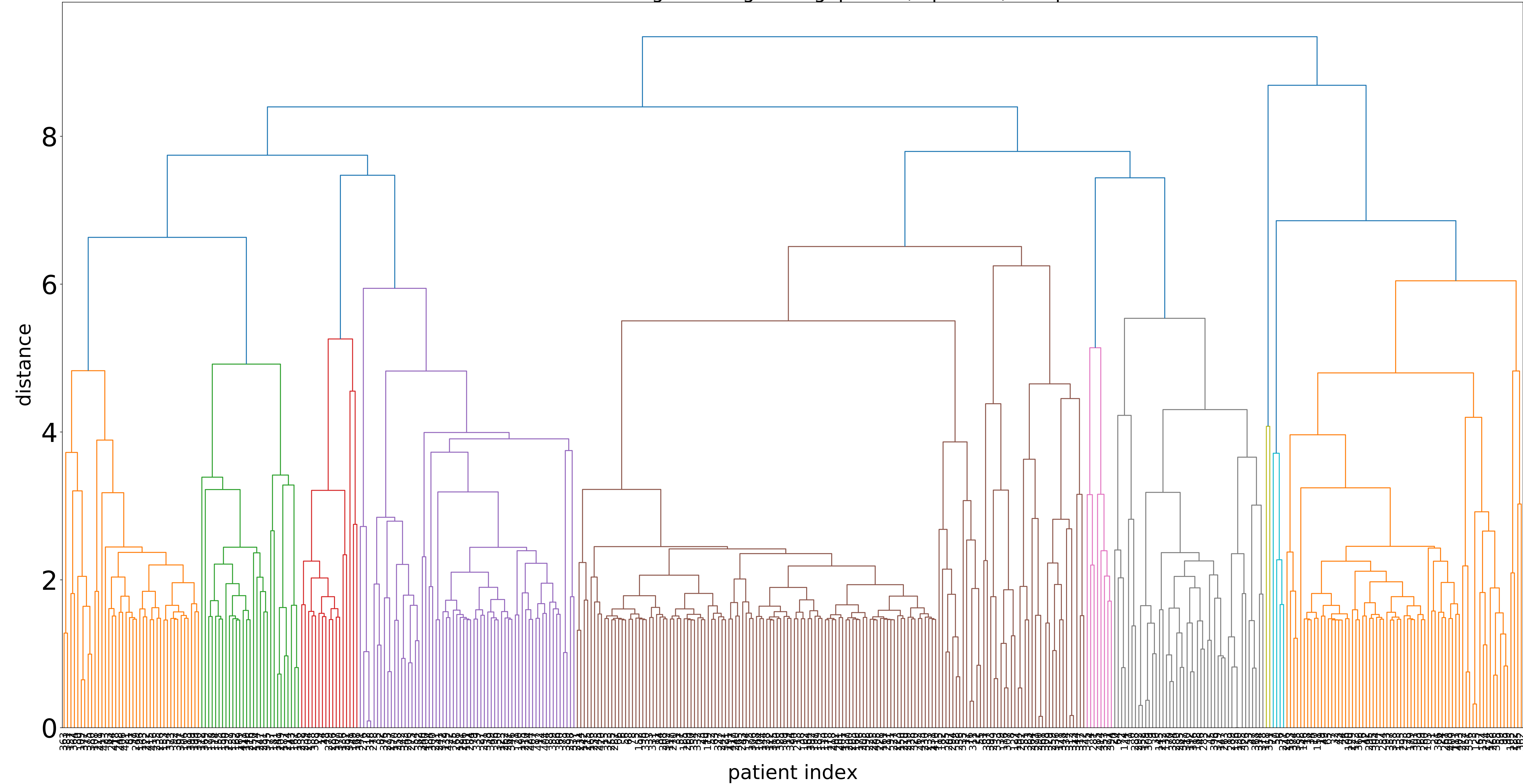Cophenetic Correlation Coefficient: 0.7418306069198484

# Average values of five clustering indices
## gap: 0.70, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99997 | 0.71596 | 0.56359 | 0.18331 | 0.20467 | 0.2245 | 0.70431 | 0.24614 | 0.72809 | 3e-05 | 0.48568 | 0.42538 | 0.01348 | 0.16659 | 0.22281 |
| 3.0 | 1.00002 | 0.8024 | 0.67801 | 0.83858 | 0.1335 | 0.66506 | 0.78864 | -0.48148 | 0.8167 | 0.00011 | 0.7079 | 0.5591 | 0.01348 | 0.28212 | 0.25134 |
| 4.0 | 1.0 | 0.82377 | 0.70912 | 0.86347 | 0.10969 | 0.74546 | 0.81607 | -1.20747 | 0.8317 | 0.00014 | 0.79733 | 0.58374 | 0.02435 | 0.3001 | 0.25568 |
| 5.0 | 1.0 | 0.87065 | 0.78212 | 0.85449 | 0.08082 | 0.82024 | 0.86819 | -1.81625 | 0.87314 | 0.00017 | 0.86596 | 0.66958 | 0.02435 | 0.32062 | 0.25874 |
| 6.0 | 1.0 | 0.89828 | 0.82222 | 0.84334 | 0.06897 | 0.86311 | 0.89698 | -3.05051 | 0.89959 | 0.00018 | 0.9015 | 0.71493 | 1.71429 | 0.3137 | 0.16131 |
| 7.0 | 1.0 | 0.91738 | 0.8511 | 0.85649 | 0.06314 | 0.89232 | 0.91649 | -4.2286 | 0.91826 | 0.0002 | 0.92581 | 0.75187 | 1.71429 | 0.32841 | 0.16722 |
| 8.0 | 1.0 | 0.91014 | 0.83688 | 0.83082 | 0.07091 | 0.88459 | 0.90857 | -5.32801 | 0.91171 | 0.0002 | 0.92187 | 0.72868 | 1.71429 | 0.32878 | 0.18265 |
| 9.0 | 1.0 | 0.92477 | 0.86206 | 0.8518 | 0.04412 | 0.90529 | 0.92289 | -6.78758 | 0.92666 | 0.00021 | 0.93802 | 0.76959 | 1.71429 | 0.35734 | 0.19573 |
| 10.0 | 1.0 | 0.87261 | 0.77785 | 0.84996 | 0.07071 | 0.84371 | 0.87173 | -7.72738 | 0.8735 | 0.00022 | 0.90963 | 0.64709 | 1.71429 | 0.30672 | 0.1964 |
| 11.0 | 1.0 | 0.84332 | 0.72967 | 0.8605 | 0.09383 | 0.81239 | 0.84152 | -8.38537 | 0.84514 | 0.00023 | 0.89987 | 0.58014 | 1.71429 | 0.28404 | 0.19994 |
| 12.0 | 1.0 | 0.84392 | 0.73184 | 0.83493 | 0.09651 | 0.81435 | 0.84285 | -9.53493 | 0.84499 | 0.00024 | 0.90446 | 0.58303 | 1.71429 | 0.26842 | 0.20363 |
| 13.0 | 1.0 | 0.83948 | 0.72504 | 0.82991 | 0.10155 | 0.81112 | 0.83854 | -10.62694 | 0.84043 | 0.00025 | 0.90734 | 0.57378 | 1.71429 | 0.26292 | 0.22025 |
| 14.0 | 1.0 | 0.84139 | 0.72725 | 0.82543 | 0.10274 | 0.81493 | 0.8405 | -11.07921 | 0.84229 | 0.00026 | 0.91251 | 0.57535 | 1.71429 | 0.26023 | 0.22277 |
| 15.0 | 1.0 | 0.84242 | 0.72863 | 0.80715 | 0.10435 | 0.81687 | 0.84169 | -12.84693 | 0.84315 | 0.00027 | 0.91522 | 0.57646 | 2.0 | 0.23076 | 0.22532 |
| 16.0 | 1.0 | 0.87975 | 0.7867 | 0.88229 | 0.09591 | 0.86182 | 0.87905 | -14.53328 | 0.88045 | 0.0003 | 0.93899 | 0.65348 | 2.0 | 0.22692 | 0.23264 |
| 17.0 | 1.0 | 0.87812 | 0.78419 | 0.86661 | 0.09762 | 0.86024 | 0.87753 | -15.93487 | 0.8787 | 0.0003 | 0.93915 | 0.64984 | 2.0 | 0.23526 | 0.24197 |
| 18.0 | 1.0 | 0.8766 | 0.78172 | 0.86096 | 0.09855 | 0.859 | 0.87604 | -17.00204 | 0.87715 | 0.00031 | 0.9399 | 0.64623 | 2.0 | 0.22636 | 0.24355 |
| 19.0 | 1.0 | 0.87593 | 0.78044 | 0.85493 | 0.09908 | 0.85871 | 0.87538 | -18.95257 | 0.87648 | 0.00032 | 0.94094 | 0.64395 | 2.0 | 0.2236 | 0.25372 |
| 20.0 | 1.0 | 0.87764 | 0.78312 | 0.85634 | 0.0975 | 0.86123 | 0.87721 | -20.78945 | 0.87808 | 0.00033 | 0.94349 | 0.64719 | 2.0 | 0.20793 | 0.25381 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.70, Tp: 1.00, complete link

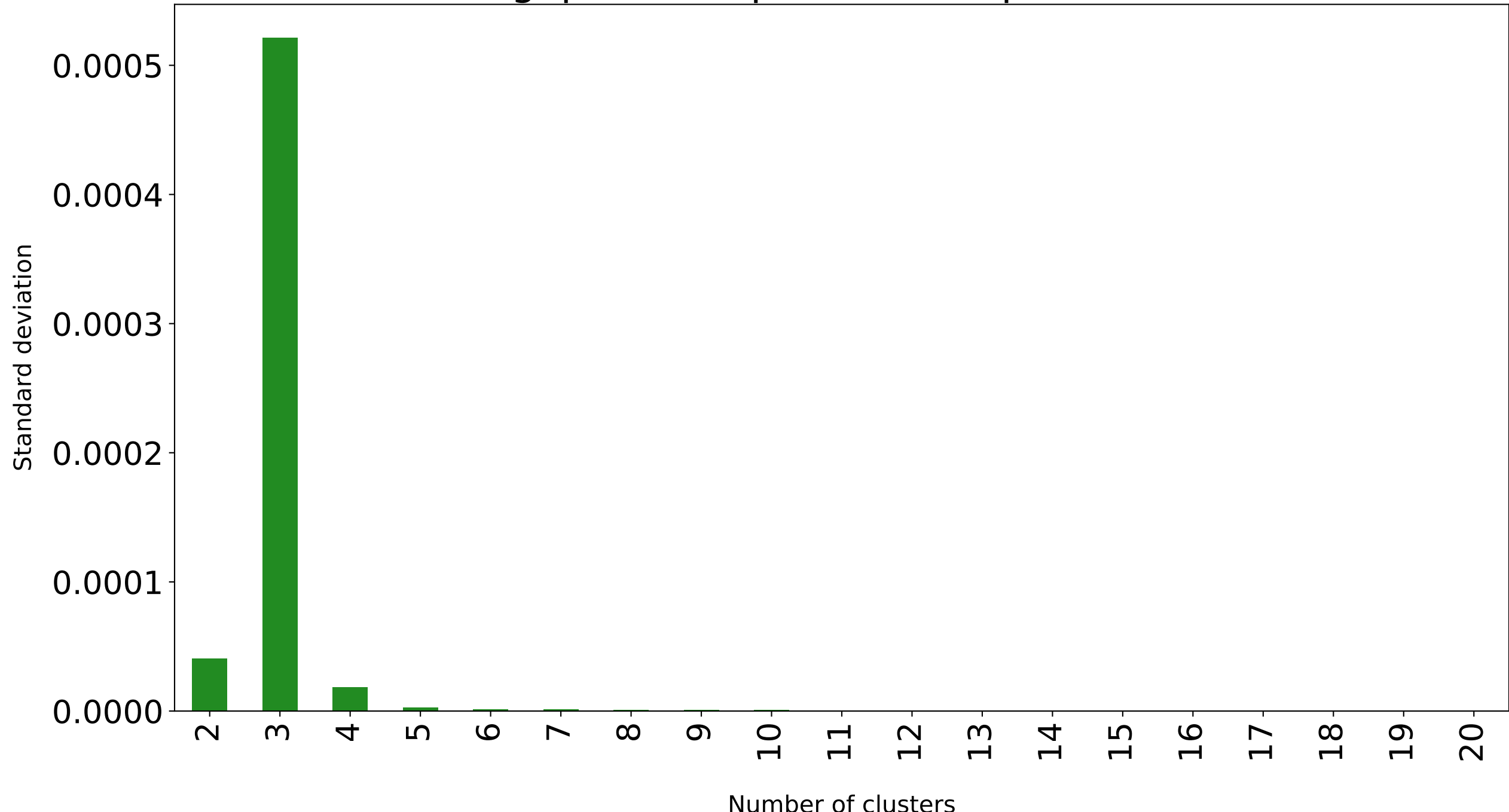Hierarchical Clustering Dendrogram - gap: 0.80, Tp: 1.00, complete link

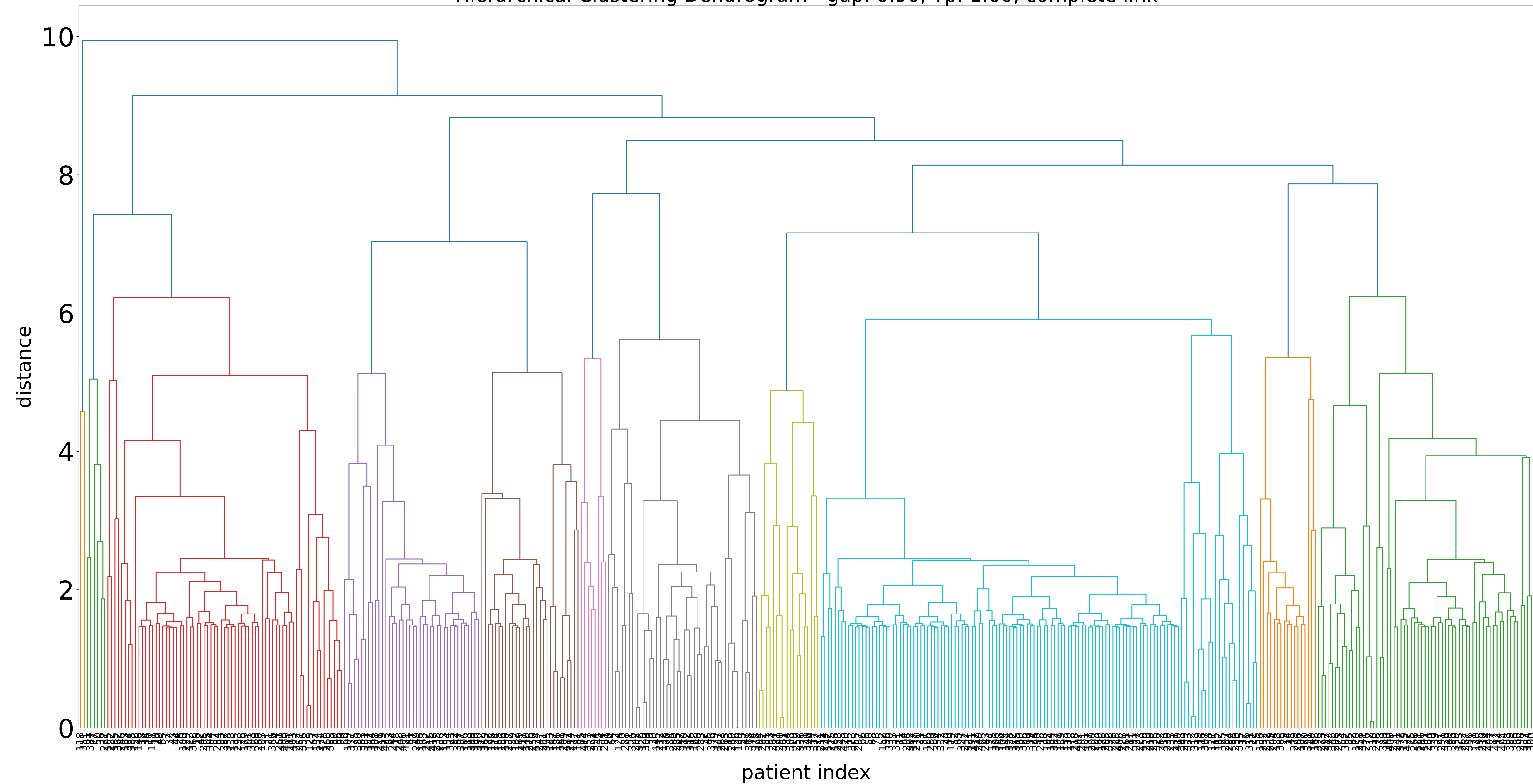Cophenetic Correlation Coefficient: 0.6727003867708636

## Average values of five clustering indices
## gap: 0.80, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.76662 | 0.62086 | 0.17732 | 0.14681 | 0.08569 | 0.75983 | 0.29607 | 0.77348 | 3e-05 | 0.48937 | 0.45934 | 0.11429 | 0.21397 | 0.18006 |
| 3.0 | 0.99997 | 0.72102 | 0.55941 | 0.22265 | 0.19286 | 0.32472 | 0.70781 | 0.17749 | 0.73482 | 6e-05 | 0.49356 | 0.40054 | 1.92857 | 0.28396 | 0.18633 |
| 4.0 | 1.00001 | 0.61822 | 0.45189 | 0.37658 | 0.26453 | 0.39272 | 0.61563 | -0.32001 | 0.62084 | 7e-05 | 0.56094 | 0.29822 | 1.92857 | 0.24338 | 0.20073 |
| 5.0 | 1.0 | 0.69416 | 0.53829 | 0.55877 | 0.21481 | 0.56826 | 0.69223 | -1.22779 | 0.69612 | 0.00011 | 0.69984 | 0.3771 | 1.92857 | 0.22094 | 0.20205 |
| 6.0 | 1.0 | 0.76049 | 0.62117 | 0.72827 | 0.16487 | 0.68402 | 0.7585 | -2.35486 | 0.7625 | 0.00015 | 0.79295 | 0.46188 | 1.92857 | 0.24082 | 0.20938 |
| 7.0 | 1.0 | 0.79702 | 0.67177 | 0.7712 | 0.13886 | 0.73783 | 0.79581 | -3.57842 | 0.79824 | 0.00017 | 0.83378 | 0.51942 | 1.92857 | 0.27936 | 0.21036 |
| 8.0 | 1.0 | 0.80298 | 0.68012 | 0.76181 | 0.1333 | 0.74846 | 0.80215 | -4.23792 | 0.80382 | 0.00018 | 0.84455 | 0.52875 | 1.92857 | 0.29241 | 0.22816 |
| 9.0 | 1.0 | 0.801 | 0.67609 | 0.73837 | 0.13536 | 0.74888 | 0.80006 | -5.39137 | 0.80194 | 0.00018 | 0.84871 | 0.52282 | 1.92857 | 0.29058 | 0.23591 |
| 10.0 | 1.0 | 0.8237 | 0.70764 | 0.76655 | 0.10282 | 0.7814 | 0.82271 | -6.93662 | 0.8247 | 0.0002 | 0.87303 | 0.56007 | 1.92857 | 0.31947 | 0.2404 |
| 11.0 | 1.0 | 0.81113 | 0.68365 | 0.8308 | 0.11293 | 0.77385 | 0.80897 | -8.13954 | 0.81331 | 0.00022 | 0.88068 | 0.52618 | 1.92857 | 0.27902 | 0.25045 |
| 12.0 | 1.0 | 0.81864 | 0.69526 | 0.81627 | 0.10834 | 0.78438 | 0.81741 | -9.31712 | 0.81988 | 0.00023 | 0.89011 | 0.53942 | 1.92857 | 0.26638 | 0.25499 |
| 13.0 | 1.0 | 0.82928 | 0.7104 | 0.80915 | 0.10581 | 0.79852 | 0.82832 | -10.98636 | 0.83024 | 0.00024 | 0.9003 | 0.55645 | 1.92857 | 0.23918 | 0.21653 |
| 14.0 | 1.0 | 0.84143 | 0.72808 | 0.80315 | 0.10263 | 0.81418 | 0.84057 | -12.06017 | 0.84229 | 0.00026 | 0.91063 | 0.5776 | 1.92857 | 0.25311 | 0.2324 |
| 15.0 | 1.0 | 0.84969 | 0.74005 | 0.80278 | 0.10024 | 0.82488 | 0.8488 | -12.67173 | 0.85057 | 0.00027 | 0.91771 | 0.59207 | 1.92857 | 0.25281 | 0.23385 |
| 16.0 | 1.0 | 0.89354 | 0.8095 | 0.89232 | 0.08942 | 0.87743 | 0.89296 | -14.37337 | 0.89413 | 0.0003 | 0.9452 | 0.68607 | 1.92857 | 0.2504 | 0.24474 |
| 17.0 | 1.0 | 0.89274 | 0.80816 | 0.88117 | 0.0934 | 0.87677 | 0.89223 | -16.18018 | 0.89325 | 0.00031 | 0.94562 | 0.68376 | 2.0 | 0.22714 | 0.2504 |
| 18.0 | 1.0 | 0.88764 | 0.79977 | 0.86348 | 0.09769 | 0.87118 | 0.88707 | -17.53929 | 0.88821 | 0.00031 | 0.94386 | 0.67188 | 2.0 | 0.23737 | 0.26166 |
| 19.0 | 1.0 | 0.88379 | 0.79353 | 0.85275 | 0.10116 | 0.86721 | 0.88319 | -19.4167 | 0.88438 | 0.00031 | 0.94328 | 0.66314 | 2.0 | 0.23461 | 0.26648 |
| 20.0 | 1.0 | 0.87581 | 0.78065 | 0.84134 | 0.10597 | 0.85867 | 0.8752 | -21.09522 | 0.87643 | 0.00032 | 0.94114 | 0.64513 | 2.0 | 0.22163 | 0.2667 |

**Standard deviation of Adjusted Rand versus number of clusters**
gap: 0.80, Tp: 1.00, complete link

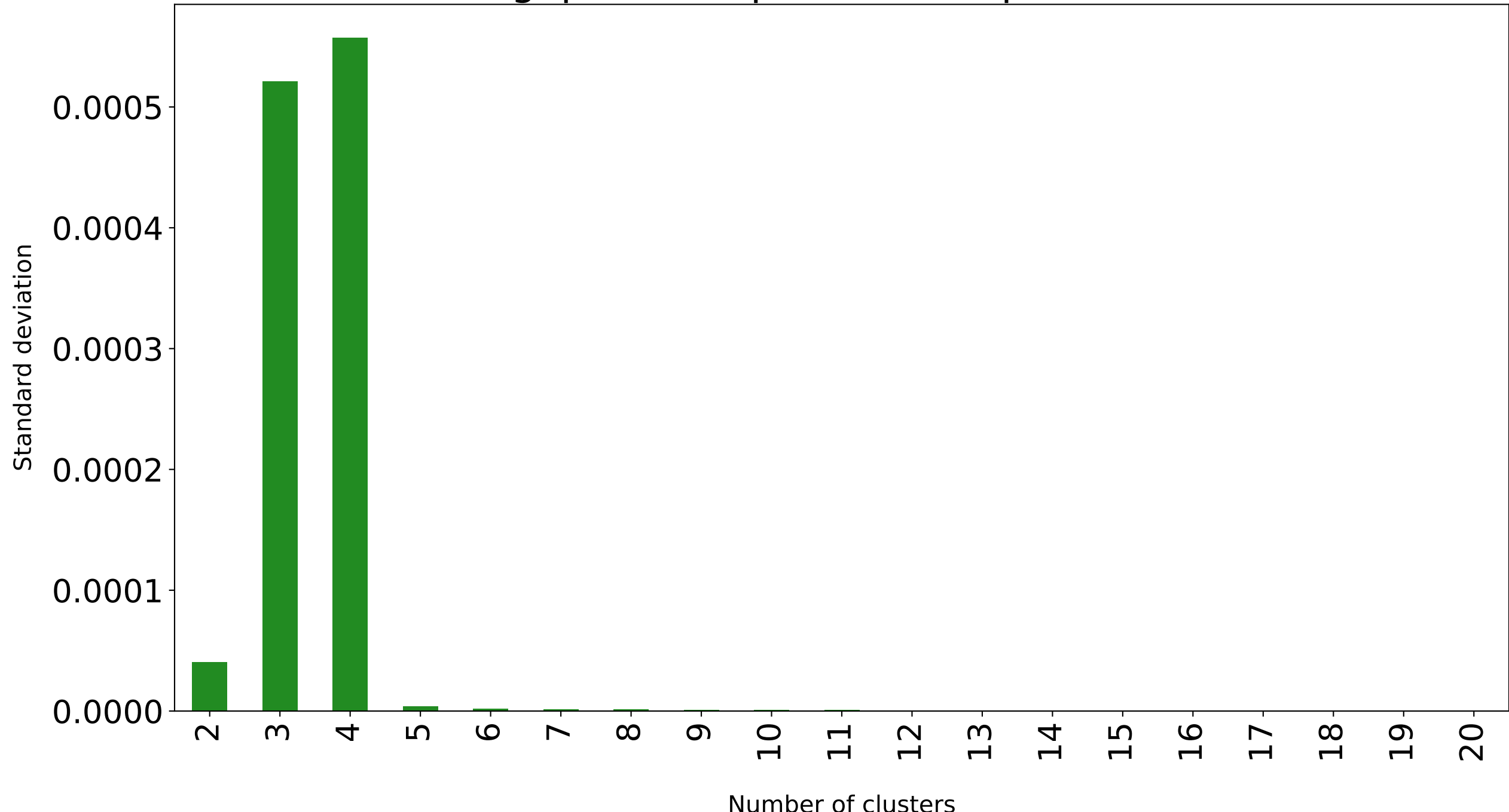Hierarchical Clustering Dendrogram - gap: 0.90, Tp: 1.00, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.6805834355420981

## Average values of five clustering indices
## gap: 0.90, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1.0 | 0.89233 | 0.80717 | 0.15978 | 0.06898 | 0.29185 | 0.88198 | 0.13901 | 0.90311 | 0.00058 | 0.71224 | 0.7109 | 1.92857 | 0.39602 | 0.36111 |
| 3.0 | 0.99997 | 0.71809 | 0.55586 | 0.20802 | 0.19179 | 0.30247 | 0.70669 | 0.20701 | 0.72991 | 5e-05 | 0.48732 | 0.3946 | 1.92857 | 0.26468 | 0.18854 |
| 4.0 | 0.99999 | 0.58212 | 0.40931 | 0.21215 | 0.26572 | 0.26945 | 0.57466 | -0.06376 | 0.58977 | 4e-05 | 0.46714 | 0.2621 | 1.92857 | 0.25109 | 0.19594 |
| 5.0 | 1.00001 | 0.62348 | 0.45504 | 0.38369 | 0.23532 | 0.44182 | 0.61881 | -0.92742 | 0.6282 | 8e-05 | 0.60407 | 0.30064 | 1.92857 | 0.21116 | 0.20449 |
| 6.0 | 1.0 | 0.72723 | 0.5798 | 0.69506 | 0.18303 | 0.63838 | 0.72414 | -2.19766 | 0.73037 | 0.00014 | 0.76344 | 0.42154 | 1.92857 | 0.23626 | 0.21158 |
| 7.0 | 1.0 | 0.76142 | 0.62547 | 0.73261 | 0.15723 | 0.69064 | 0.75941 | -3.37191 | 0.76346 | 0.00016 | 0.80472 | 0.47053 | 1.92857 | 0.27488 | 0.21552 |
| 8.0 | 1.0 | 0.76748 | 0.6331 | 0.72356 | 0.15189 | 0.70207 | 0.76609 | -4.04813 | 0.7689 | 0.00016 | 0.81677 | 0.47758 | 1.92857 | 0.28693 | 0.22415 |
| 9.0 | 1.0 | 0.77152 | 0.63803 | 0.7151 | 0.15085 | 0.71072 | 0.7704 | -5.24431 | 0.77264 | 0.00017 | 0.82674 | 0.4825 | 1.92857 | 0.26318 | 0.2325 |
| 10.0 | 1.0 | 0.76785 | 0.62921 | 0.74642 | 0.15004 | 0.71425 | 0.7663 | -6.51223 | 0.76942 | 0.00019 | 0.83949 | 0.46954 | 1.92857 | 0.23207 | 0.23341 |
| 11.0 | 1.0 | 0.80537 | 0.68138 | 0.79492 | 0.11296 | 0.76454 | 0.80396 | -8.22653 | 0.80681 | 0.00021 | 0.87337 | 0.53106 | 1.92857 | 0.26311 | 0.26292 |
| 12.0 | 1.0 | 0.79643 | 0.66688 | 0.77745 | 0.1183 | 0.75705 | 0.79522 | -9.25409 | 0.79764 | 0.00022 | 0.87589 | 0.51038 | 1.92857 | 0.26175 | 0.26392 |
| 13.0 | 1.0 | 0.80328 | 0.67489 | 0.76288 | 0.11484 | 0.76729 | 0.80233 | -10.892 | 0.80424 | 0.00023 | 0.885 | 0.51695 | 1.92857 | 0.23571 | 0.23494 |
| 14.0 | 1.0 | 0.86111 | 0.75718 | 0.89854 | 0.10204 | 0.83936 | 0.85879 | -12.81052 | 0.86344 | 0.00028 | 0.92537 | 0.61789 | 1.92857 | 0.22027 | 0.2444 |
| 15.0 | 1.0 | 0.87484 | 0.77919 | 0.89814 | 0.09362 | 0.85584 | 0.87342 | -14.12264 | 0.87626 | 0.0003 | 0.93495 | 0.64593 | 1.92857 | 0.23313 | 0.247 |
| 16.0 | 1.0 | 0.88878 | 0.80182 | 0.91026 | 0.08908 | 0.87248 | 0.88767 | -14.82841 | 0.88989 | 0.00031 | 0.94387 | 0.67697 | 1.92857 | 0.2328 | 0.21925 |
| 17.0 | 1.0 | 0.89398 | 0.81061 | 0.90109 | 0.08974 | 0.87875 | 0.89334 | -16.77949 | 0.89462 | 0.00032 | 0.94775 | 0.68855 | 2.0 | 0.21199 | 0.22003 |
| 18.0 | 1.0 | 0.895 | 0.81226 | 0.88872 | 0.09044 | 0.88015 | 0.89454 | -18.24586 | 0.89546 | 0.00032 | 0.94911 | 0.69024 | 2.0 | 0.22367 | 0.22881 |
| 19.0 | 1.0 | 0.89445 | 0.81118 | 0.88312 | 0.09204 | 0.8799 | 0.89403 | -20.20486 | 0.89489 | 0.00033 | 0.94993 | 0.68831 | 2.0 | 0.22315 | 0.22905 |
| 20.0 | 1.0 | 0.89568 | 0.813 | 0.88351 | 0.0918 | 0.88173 | 0.89529 | -22.01208 | 0.89606 | 0.00034 | 0.95181 | 0.69038 | 2.0 | 0.21237 | 0.22927 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.90, Tp: 1.00, complete link

Hierarchical Clustering Dendrogram - gap: 1.00, Tp: 1.00, complete link

Cophenetic Correlation Coefficient: 0.7120187419925529
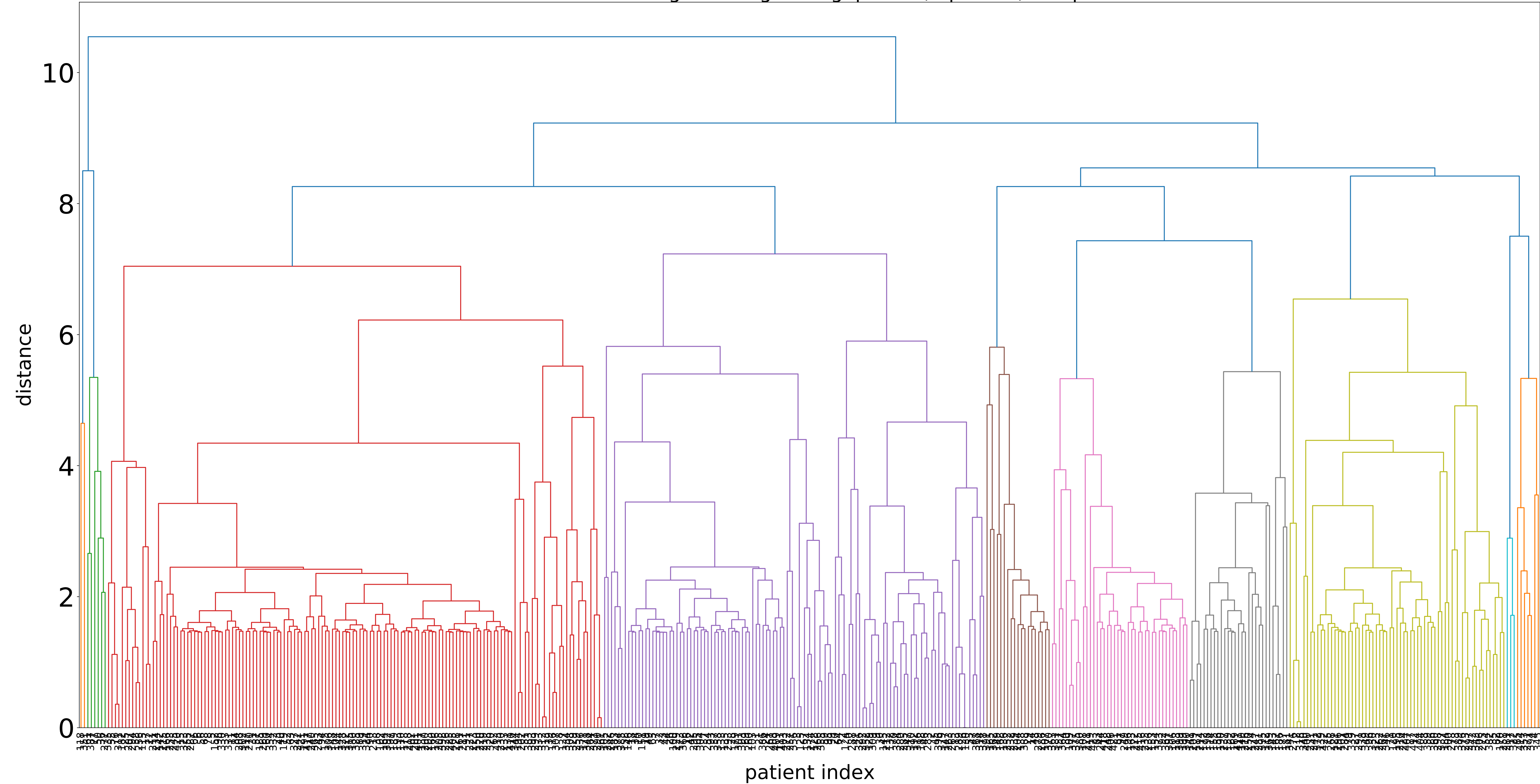
## Average values of five clustering indices
## gap: 1.00, Tp: 1.00, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1.0 | 0.93832 | 0.88761 | 0.41901 | 0.04051 | 0.45116 | 0.93468 | 0.09903 | 0.94209 | 0.00047 | 0.82192 | 0.81886 | 1.04651 | 0.30181 | 0.20623 |
| 3.0 | 1.00001 | 0.67779 | 0.52916 | 0.30965 | 0.23692 | 0.28922 | 0.67312 | 0.09942 | 0.6826 | 5e-05 | 0.49876 | 0.39106 | 1.04651 | 0.17324 | 0.21604 |
| 4.0 | 1.00002 | 0.63975 | 0.48907 | 0.36564 | 0.24232 | 0.3796 | 0.63634 | -0.37538 | 0.64321 | 6e-05 | 0.55026 | 0.35137 | 1.04651 | 0.21011 | 0.21716 |
| 5.0 | 1.00001 | 0.64201 | 0.47967 | 0.34647 | 0.23669 | 0.43075 | 0.63241 | -1.13408 | 0.65187 | 7e-05 | 0.57629 | 0.33612 | 1.88372 | 0.23472 | 0.21924 |
| 6.0 | 1.00004 | 0.61942 | 0.43733 | 0.29691 | 0.2454 | 0.42588 | 0.60153 | -1.59521 | 0.63801 | 8e-05 | 0.56571 | 0.28615 | 1.88372 | 0.23381 | 0.22349 |
| 7.0 | 1.0 | 0.80662 | 0.69051 | 0.72832 | 0.12752 | 0.74042 | 0.80456 | -3.74563 | 0.8087 | 0.00016 | 0.82432 | 0.55223 | 1.88372 | 0.25437 | 0.22349 |
| 8.0 | 1.0 | 0.81827 | 0.70642 | 0.74405 | 0.12286 | 0.76228 | 0.81668 | -4.75532 | 0.81988 | 0.00017 | 0.84542 | 0.57031 | 1.88372 | 0.26121 | 0.24606 |
| 9.0 | 1.0 | 0.81424 | 0.69718 | 0.71372 | 0.12521 | 0.76009 | 0.81177 | -6.01245 | 0.81674 | 0.00017 | 0.84622 | 0.55533 | 1.88372 | 0.29338 | 0.24837 |
| 10.0 | 1.0 | 0.82217 | 0.70883 | 0.72407 | 0.10256 | 0.77424 | 0.81953 | -7.48387 | 0.82483 | 0.00019 | 0.86015 | 0.57015 | 1.88372 | 0.31791 | 0.25526 |
| 11.0 | 1.0 | 0.80719 | 0.68591 | 0.75003 | 0.11386 | 0.76238 | 0.80573 | -8.31149 | 0.80867 | 0.0002 | 0.8653 | 0.53737 | 1.88372 | 0.29865 | 0.25054 |
| 12.0 | 1.0 | 0.82422 | 0.70699 | 0.79254 | 0.1077 | 0.7879 | 0.82292 | -9.81624 | 0.82554 | 0.00022 | 0.88629 | 0.55887 | 1.88372 | 0.29351 | 0.2697 |
| 13.0 | 1.0 | 0.82564 | 0.70645 | 0.7677 | 0.1058 | 0.7919 | 0.82408 | -10.63023 | 0.82721 | 0.00023 | 0.89214 | 0.55484 | 1.88372 | 0.30529 | 0.27029 |
| 14.0 | 1.0 | 0.87026 | 0.77372 | 0.87755 | 0.0963 | 0.84814 | 0.86894 | -12.41852 | 0.8716 | 0.00027 | 0.92624 | 0.64116 | 1.88372 | 0.28442 | 0.28501 |
| 15.0 | 1.0 | 0.88275 | 0.79341 | 0.88139 | 0.09212 | 0.86357 | 0.8818 | -13.11832 | 0.8837 | 0.00028 | 0.93562 | 0.6669 | 1.88372 | 0.28207 | 0.21904 |
| 16.0 | 1.0 | 0.89183 | 0.80771 | 0.87633 | 0.0899 | 0.87476 | 0.89116 | -14.93983 | 0.8925 | 0.00029 | 0.94241 | 0.68563 | 1.88372 | 0.28646 | 0.21949 |
| 17.0 | 1.0 | 0.8948 | 0.81146 | 0.86199 | 0.09121 | 0.87872 | 0.89404 | -16.88053 | 0.89555 | 0.0003 | 0.94527 | 0.68909 | 2.0 | 0.26438 | 0.23099 |
| 18.0 | 1.0 | 0.89211 | 0.80628 | 0.84631 | 0.0928 | 0.87612 | 0.89114 | -18.29525 | 0.89308 | 0.00031 | 0.94507 | 0.68088 | 2.0 | 0.26474 | 0.23458 |
| 19.0 | 1.0 | 0.88812 | 0.79911 | 0.83447 | 0.0962 | 0.87191 | 0.88695 | -20.12667 | 0.88929 | 0.00031 | 0.94399 | 0.66999 | 2.0 | 0.26687 | 0.23501 |
| 20.0 | 1.0 | 0.90001 | 0.8195 | 0.86536 | 0.08967 | 0.88612 | 0.89938 | -21.95799 | 0.90065 | 0.00033 | 0.95195 | 0.69917 | 2.0 | 0.25953 | 0.23611 |

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