Hierarchical Clustering Dendrogram - gap: 0.00, Tp: 0.25, complete link
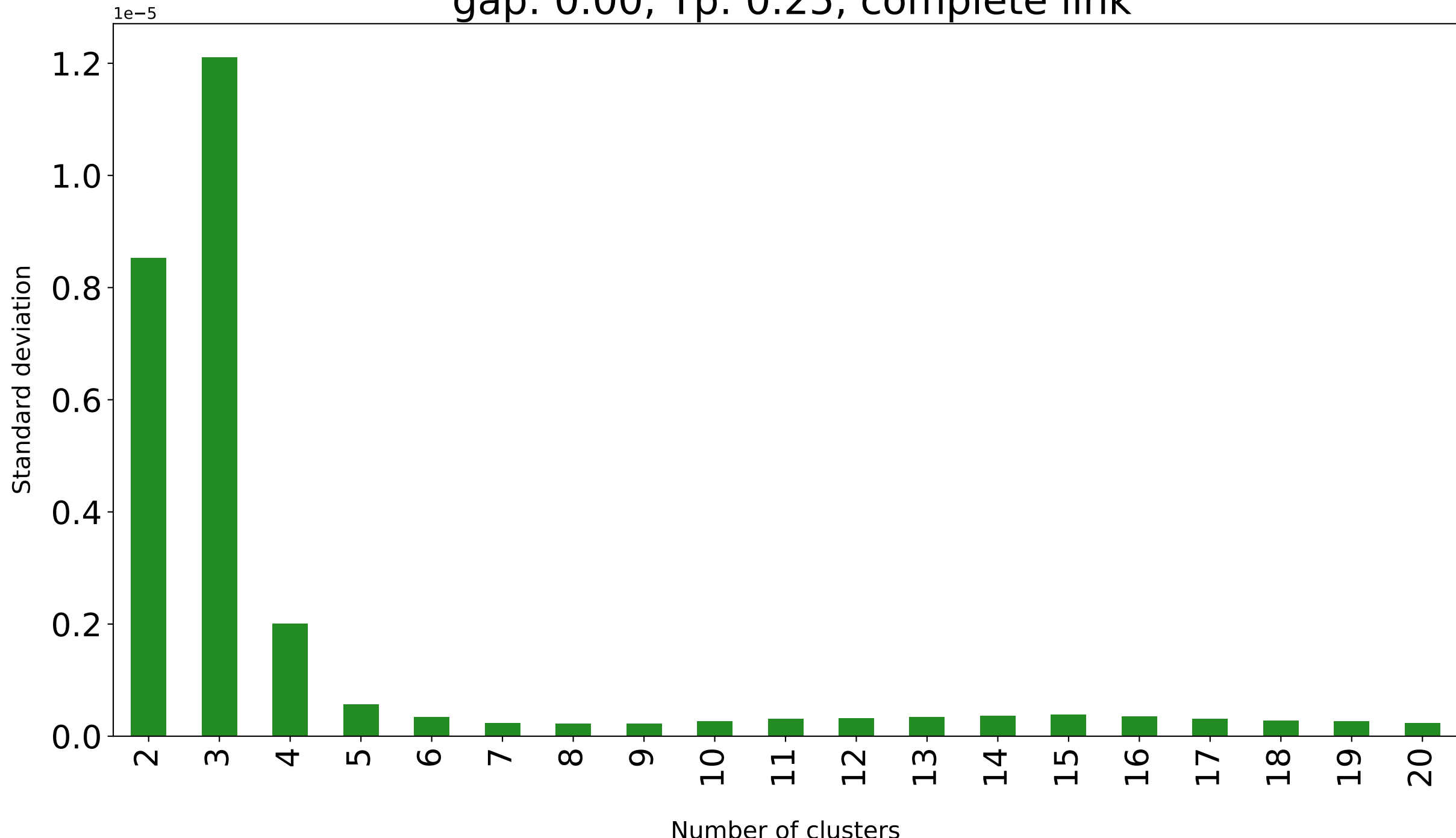
distance

patient index
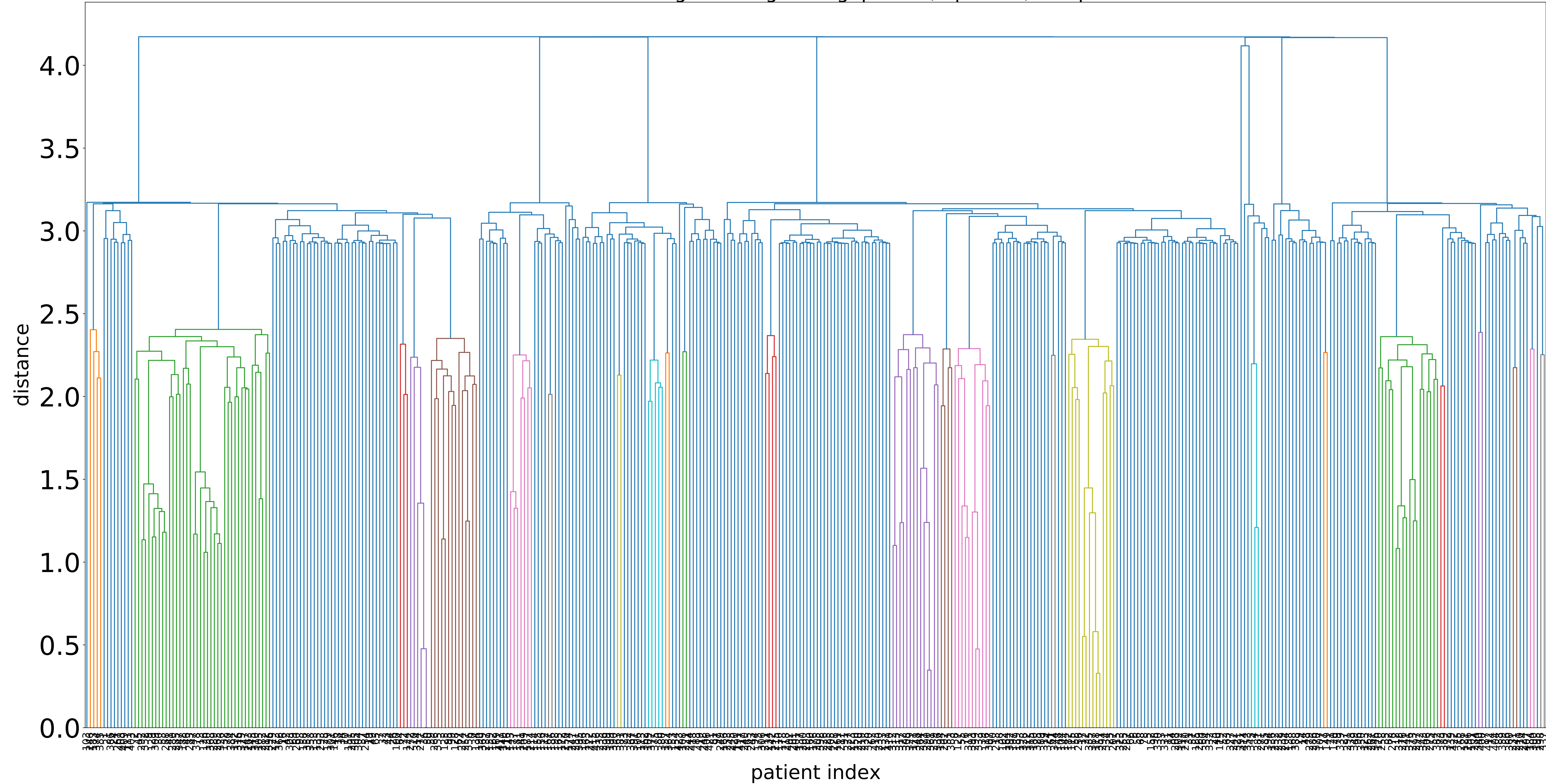
Cophenetic Correlation Coefficient: 0.7115753978445999

# Average values of five clustering indices
## gap: 0.00, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99999 | 0.88788 | 0.82818 | 0.66668 | 0.06889 | 0.68609 | 0.8867 | 0.29547 | 0.88907 | 0.00011 | 0.79569 | 0.76651 | 0.03226 | 0.1442 | 0.12315 |
| 3.0 | 1.00001 | 0.89274 | 0.83086 | 0.84654 | 0.07153 | 0.81414 | 0.89109 | 0.2673 | 0.89442 | 0.00013 | 0.84957 | 0.76159 | 0.05634 | 0.13675 | 0.12318 |
| 4.0 | 1.0 | 0.89296 | 0.81334 | 0.92066 | 0.07267 | 0.84845 | 0.88884 | 0.29517 | 0.89716 | 0.00017 | 0.8781 | 0.71305 | 0.1573 | 0.13938 | 0.12321 |
| 5.0 | 1.0 | 0.94836 | 0.90505 | 0.93752 | 0.03281 | 0.9306 | 0.94802 | 0.1778 | 0.9487 | 0.00019 | 0.94897 | 0.8369 | 0.1573 | 0.16779 | 0.12325 |
| 6.0 | 1.0 | 0.95308 | 0.91234 | 0.92414 | 0.03586 | 0.93825 | 0.9529 | 0.19052 | 0.95325 | 0.0002 | 0.95617 | 0.84535 | 0.44444 | 0.16356 | 0.1233 |
| 7.0 | 1.0 | 0.97911 | 0.96033 | 0.96687 | 0.01252 | 0.97293 | 0.97904 | 0.08326 | 0.97918 | 0.00021 | 0.98127 | 0.92815 | 0.47059 | 0.17314 | 0.12479 |
| 8.0 | 1.0 | 0.97736 | 0.95662 | 0.95651 | 0.01257 | 0.97081 | 0.97712 | 0.0825 | 0.9776 | 0.00022 | 0.97975 | 0.92116 | 2.0 | 0.28085 | 0.16196 |
| 9.0 | 1.0 | 0.9623 | 0.92719 | 0.91255 | 0.01766 | 0.95198 | 0.9614 | 0.11727 | 0.9632 | 0.00022 | 0.96687 | 0.86882 | 2.0 | 0.35056 | 0.16201 |
| 10.0 | 1.0 | 0.95164 | 0.90824 | 0.90147 | 0.02368 | 0.93882 | 0.95064 | 0.15367 | 0.95264 | 0.00022 | 0.95906 | 0.83838 | 2.0 | 0.30896 | 0.16207 |
| 11.0 | 1.0 | 0.93723 | 0.88259 | 0.87542 | 0.03986 | 0.92145 | 0.93555 | 0.21686 | 0.93892 | 0.00022 | 0.94879 | 0.79899 | 2.0 | 0.2702 | 0.16211 |
| 12.0 | 1.0 | 0.92539 | 0.86117 | 0.84854 | 0.0478 | 0.90725 | 0.92293 | 0.25866 | 0.92787 | 0.00022 | 0.94019 | 0.76614 | 2.0 | 0.23944 | 0.16213 |
| 13.0 | 1.0 | 0.91095 | 0.83565 | 0.81772 | 0.0553 | 0.89009 | 0.90735 | 0.29969 | 0.91458 | 0.00022 | 0.92999 | 0.72879 | 2.0 | 0.21857 | 0.16224 |
| 14.0 | 1.0 | 0.88836 | 0.79932 | 0.79558 | 0.06738 | 0.86428 | 0.88418 | 0.34297 | 0.89261 | 0.00022 | 0.91897 | 0.67953 | 2.0 | 0.20313 | 0.16232 |
| 15.0 | 1.0 | 0.85106 | 0.74049 | 0.73753 | 0.09167 | 0.82203 | 0.84462 | 0.42161 | 0.85763 | 0.00022 | 0.90003 | 0.6042 | 2.0 | 0.19088 | 0.1624 |
| 16.0 | 1.0 | 0.81768 | 0.69526 | 0.78579 | 0.10628 | 0.7871 | 0.81515 | 0.4757 | 0.82023 | 0.00025 | 0.89859 | 0.54485 | 2.0 | 0.18039 | 0.16241 |
| 17.0 | 1.0 | 0.81745 | 0.69397 | 0.84695 | 0.10335 | 0.79138 | 0.81421 | 0.49588 | 0.82071 | 0.00029 | 0.91 | 0.54292 | 2.0 | 0.17707 | 0.16243 |
| 18.0 | 1.0 | 0.82948 | 0.71199 | 0.8418 | 0.09633 | 0.80583 | 0.82716 | 0.47475 | 0.83182 | 0.0003 | 0.91847 | 0.56384 | 2.0 | 0.17545 | 0.16246 |
| 19.0 | 1.0 | 0.8368 | 0.72316 | 0.8385 | 0.09184 | 0.81454 | 0.83479 | 0.45692 | 0.83882 | 0.0003 | 0.92317 | 0.57771 | 2.0 | 0.1628 | 0.1625 |
| 20.0 | 1.0 | 0.84528 | 0.73617 | 0.82696 | 0.08764 | 0.82487 | 0.8438 | 0.44078 | 0.84678 | 0.00031 | 0.92949 | 0.59358 | 2.0 | 0.20467 | 0.16258 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.00, Tp: 0.25, complete link

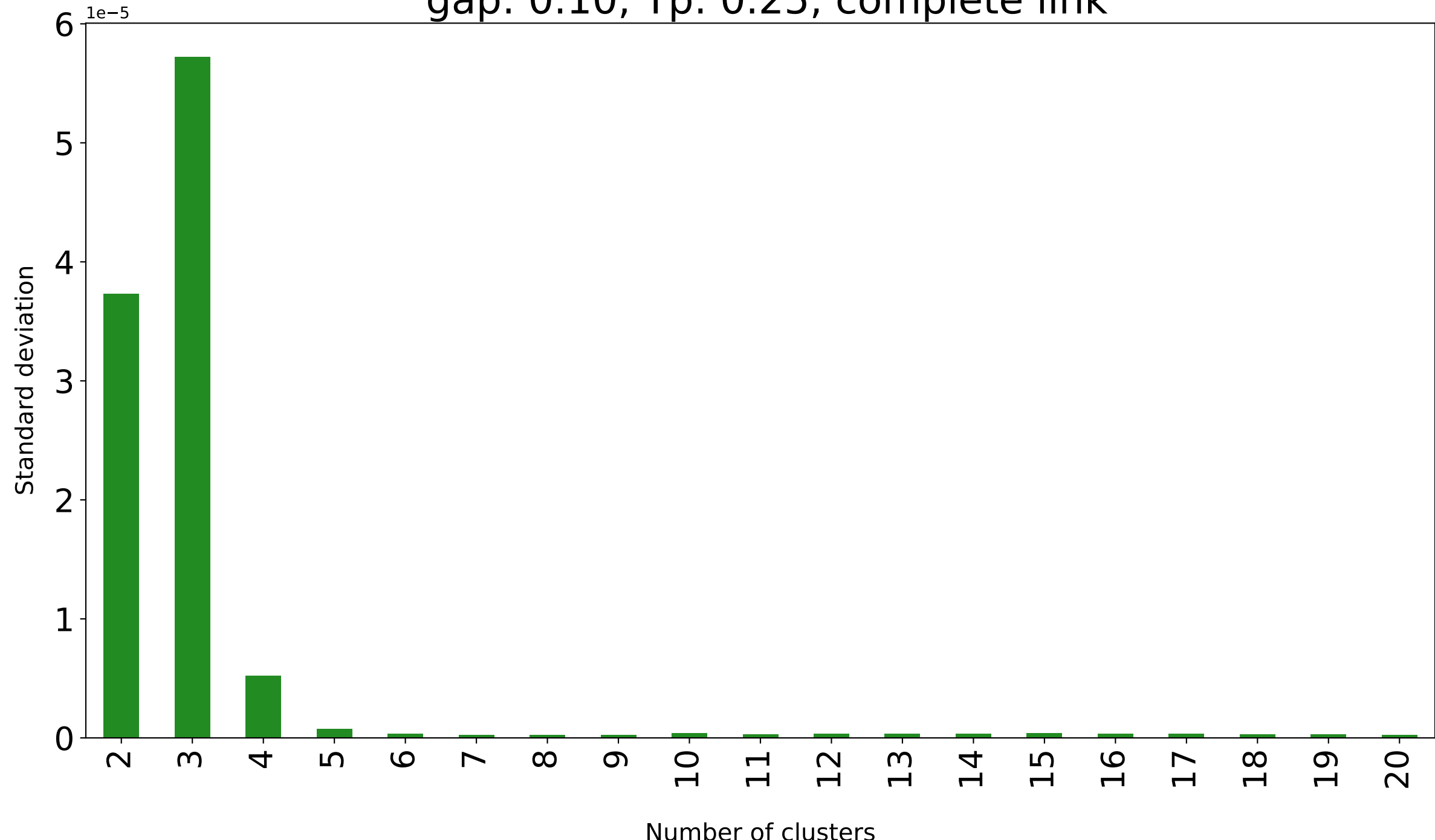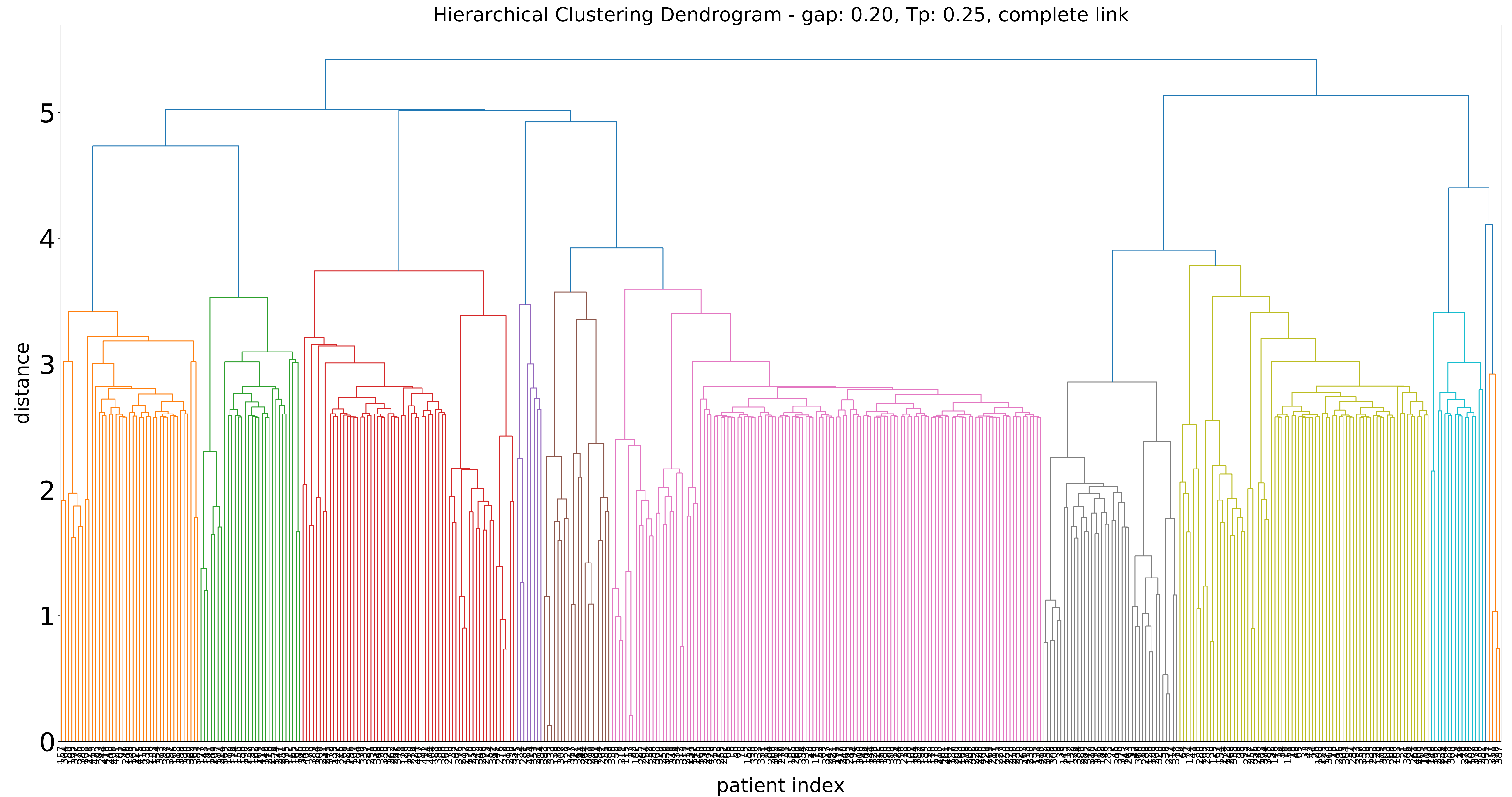Hierarchical Clustering Dendrogram - gap: 0.10, Tp: 0.25, complete link

patient index

distance
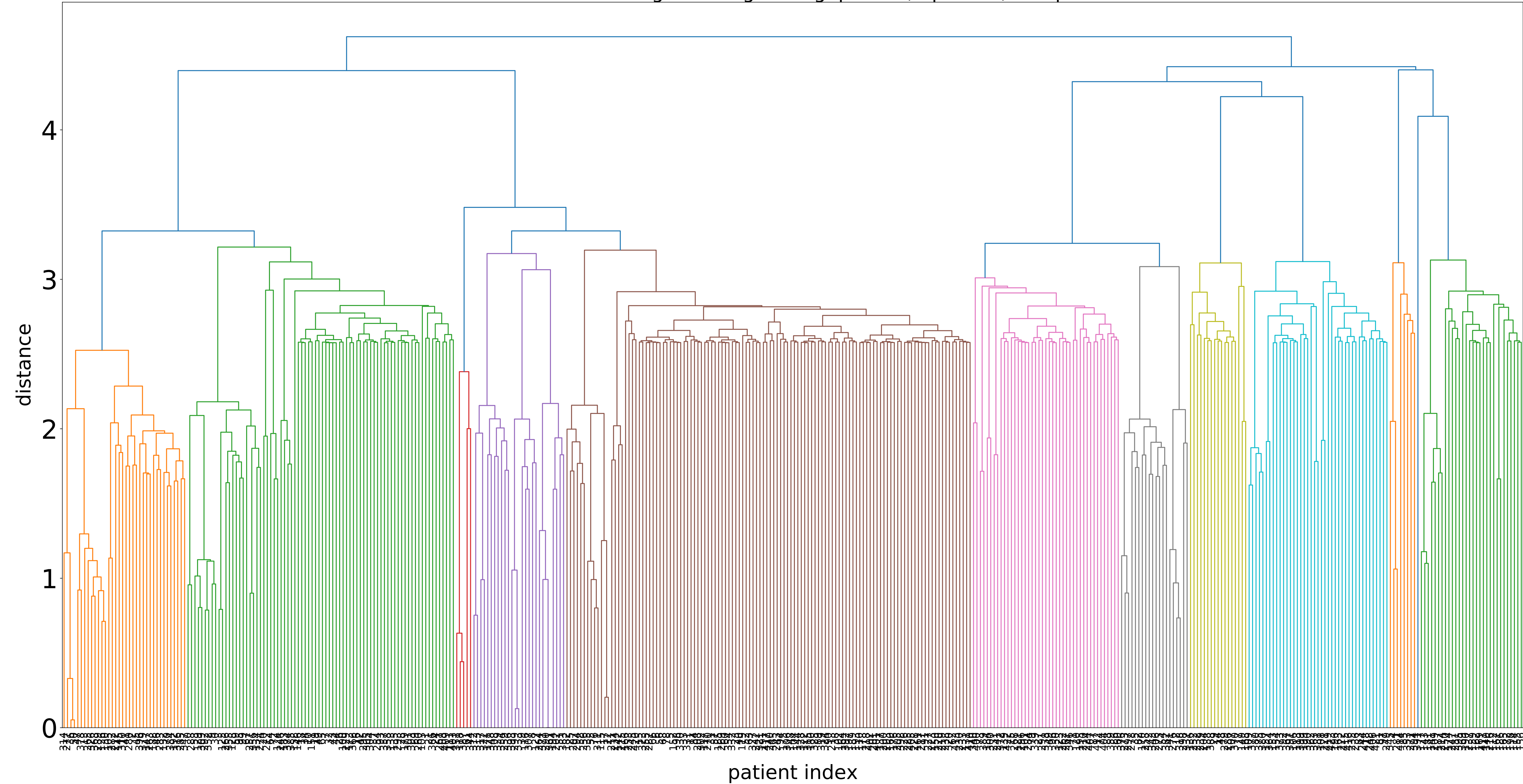
Cophenetic Correlation Coefficient: 0.7345821477507194

## Average values of five clustering indices
## gap: 0.10, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 2.0 | 0.99998 | 0.86006 | 0.79083 | 0.71309 | 0.10635 | 0.69027 | 0.85913 | 0.41012 | 0.861 | 0.00011 | 0.77481 | 0.71587 | 0.0875 | 0.10963 | 0.1054 |
| 3.0 | 1.00002 | 0.78211 | 0.66938 | 0.5693 | 0.18052 | 0.61382 | 0.77939 | 0.69612 | 0.78486 | 0.0001 | 0.70013 | 0.54545 | 0.09917 | 0.12569 | 0.10591 |
| 4.0 | 1.00001 | 0.73396 | 0.57832 | 0.44958 | 0.20462 | 0.58717 | 0.71706 | 0.75257 | 0.7515 | 0.0001 | 0.6553 | 0.43511 | 0.09917 | 0.17913 | 0.10603 |
| 5.0 | 1.0 | 0.88575 | 0.79515 | 0.78163 | 0.0972 | 0.84486 | 0.88391 | 0.39754 | 0.88761 | 0.00017 | 0.88401 | 0.66655 | 0.09917 | 0.19538 | 0.10784 |
| 6.0 | 1.0 | 0.95616 | 0.91711 | 0.93385 | 0.04169 | 0.94242 | 0.95603 | 0.21473 | 0.9563 | 0.0002 | 0.95909 | 0.85087 | 0.17241 | 0.19901 | 0.1104 |
| 7.0 | 1.0 | 0.97788 | 0.95768 | 0.96435 | 0.0153 | 0.97126 | 0.97781 | 0.10776 | 0.97796 | 0.00021 | 0.97993 | 0.92228 | 0.35294 | 0.21492 | 0.11395 |
| 8.0 | 1.0 | 0.9715 | 0.94532 | 0.94222 | 0.0154 | 0.96336 | 0.97105 | 0.10472 | 0.97195 | 0.00021 | 0.97454 | 0.90119 | 2.0 | 0.3121 | 0.1339 |
| 9.0 | 1.0 | 0.93903 | 0.88434 | 0.87126 | 0.03213 | 0.92323 | 0.93735 | 0.19003 | 0.94072 | 0.00022 | 0.94872 | 0.79854 | 2.0 | 0.29082 | 0.14024 |
| 10.0 | 1.0 | 0.873 | 0.77926 | 0.83314 | 0.07313 | 0.84456 | 0.87188 | 0.3521 | 0.87412 | 0.00022 | 0.91062 | 0.65095 | 2.0 | 0.24913 | 0.14025 |
| 11.0 | 1.0 | 0.86034 | 0.75785 | 0.84889 | 0.08045 | 0.83351 | 0.85932 | 0.41172 | 0.86136 | 0.00024 | 0.91322 | 0.61878 | 2.0 | 0.23575 | 0.14384 |
| 12.0 | 1.0 | 0.85177 | 0.74383 | 0.82244 | 0.08843 | 0.82589 | 0.85095 | 0.44552 | 0.85261 | 0.00026 | 0.91506 | 0.59806 | 2.0 | 0.22613 | 0.14495 |
| 13.0 | 1.0 | 0.85005 | 0.74024 | 0.83438 | 0.09204 | 0.82625 | 0.84936 | 0.46409 | 0.85074 | 0.00028 | 0.92058 | 0.59139 | 2.0 | 0.21758 | 0.14589 |
| 14.0 | 1.0 | 0.9053 | 0.82737 | 0.93351 | 0.07725 | 0.89177 | 0.90413 | 0.37116 | 0.90648 | 0.00032 | 0.9527 | 0.71081 | 2.0 | 0.21405 | 0.14694 |
| 15.0 | 1.0 | 0.91698 | 0.84812 | 0.93329 | 0.07425 | 0.90547 | 0.91627 | 0.36053 | 0.91769 | 0.00033 | 0.95986 | 0.7426 | 2.0 | 0.20447 | 0.14898 |
| 16.0 | 1.0 | 0.92302 | 0.85842 | 0.93062 | 0.07238 | 0.91265 | 0.92258 | 0.35092 | 0.92347 | 0.00034 | 0.96382 | 0.75723 | 2.0 | 0.20135 | 0.14946 |
| 17.0 | 1.0 | 0.92451 | 0.86047 | 0.93831 | 0.07591 | 0.91476 | 0.92401 | 0.36082 | 0.92501 | 0.00036 | 0.96569 | 0.75929 | 2.0 | 0.18486 | 0.14957 |
| 18.0 | 1.0 | 0.93217 | 0.87365 | 0.94732 | 0.0745 | 0.9237 | 0.93171 | 0.34981 | 0.93264 | 0.00037 | 0.97 | 0.7794 | 2.0 | 0.18525 | 0.14985 |
| 19.0 | 1.0 | 0.93604 | 0.88057 | 0.943 | 0.07224 | 0.92812 | 0.93572 | 0.34092 | 0.93635 | 0.00037 | 0.97203 | 0.79007 | 2.0 | 0.18712 | 0.14991 |
| 20.0 | 1.0 | 0.93916 | 0.88619 | 0.93931 | 0.0704 | 0.93173 | 0.93894 | 0.33073 | 0.93938 | 0.00038 | 0.97374 | 0.79898 | 2.0 | 0.17871 | 0.1511 |

Standard deviation of Adjusted Rand versus number of clusters
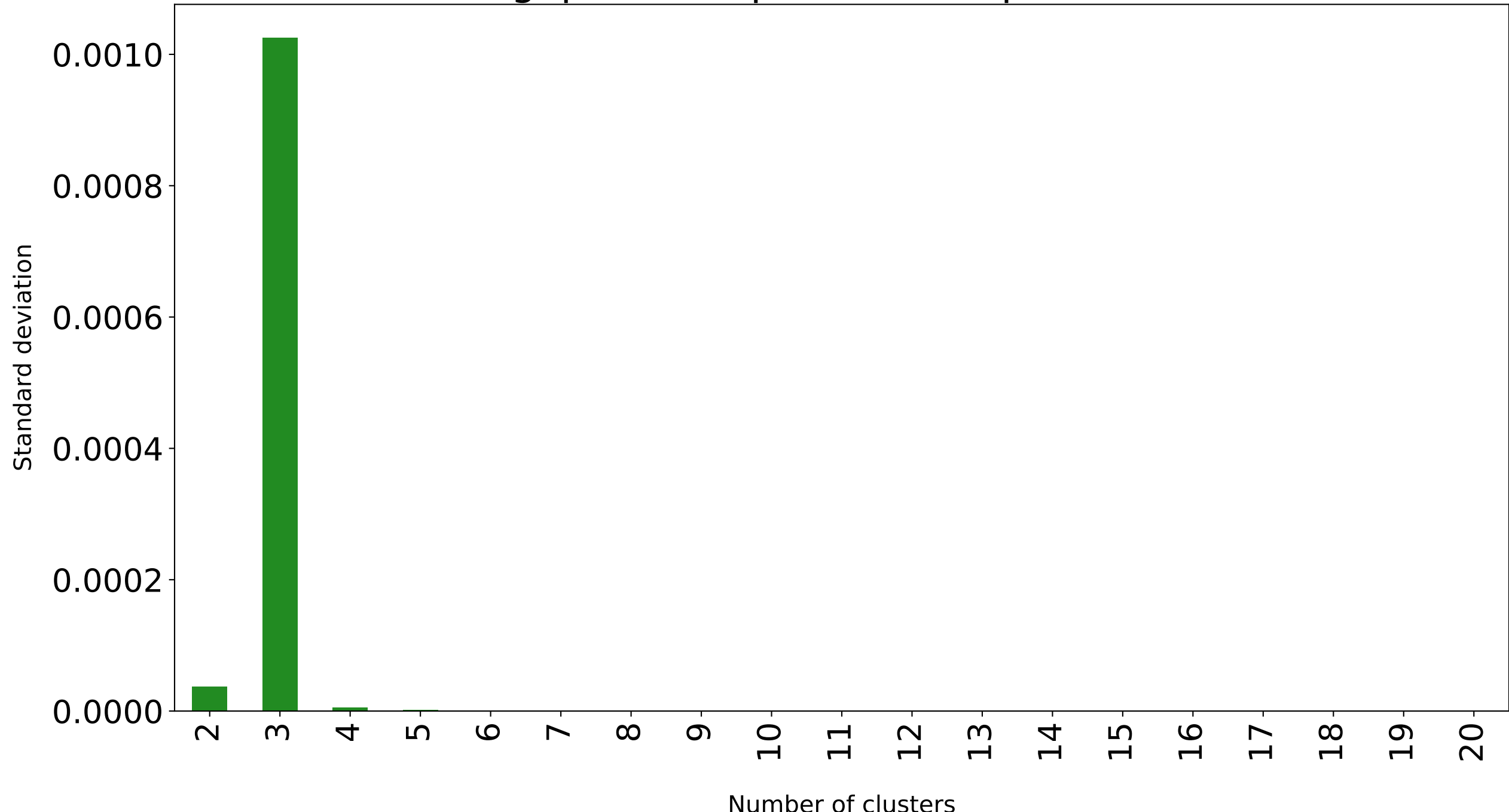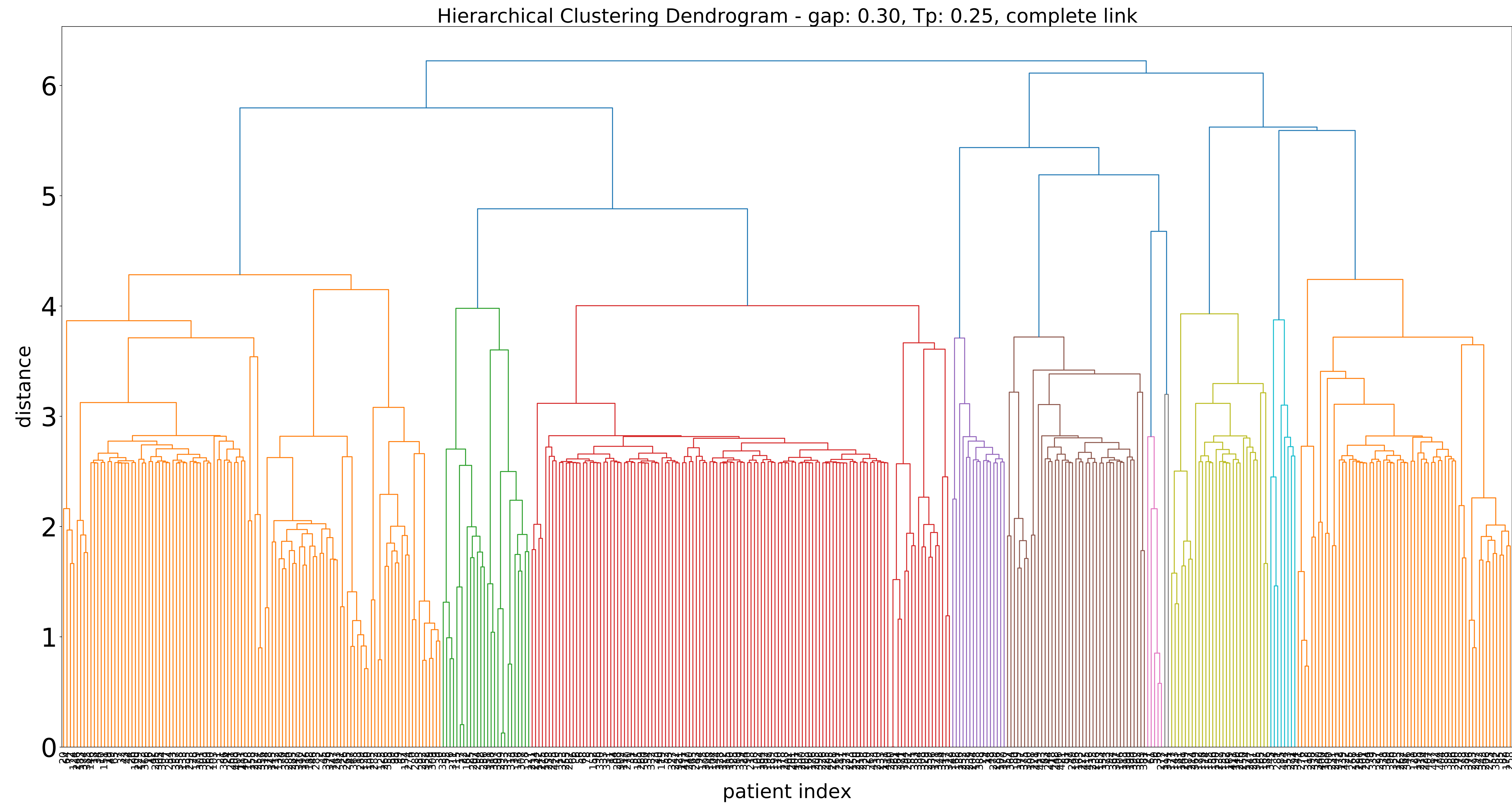gap: 0.10, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 0.20, Tp: 0.25, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.7243069112600068

# Average values of five clustering indices
## gap: 0.20, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99996 | 0.64137 | 0.48809 | 0.17909 | 0.27239 | 0.18712 | 0.64062 | 0.95589 | 0.64213 | 3e-05 | 0.44735 | 0.34682 | 0.02076 | 0.15661 | 0.14916 |
| 3.0 | 1.00004 | 0.69911 | 0.54088 | 0.33836 | 0.19689 | 0.45151 | 0.68817 | 0.76026 | 0.71032 | 7e-05 | 0.56658 | 0.39155 | 0.38095 | 0.18137 | 0.15254 |
| 4.0 | 1.00001 | 0.7471 | 0.59886 | 0.53727 | 0.15153 | 0.61884 | 0.74126 | 0.64976 | 0.753 | 0.00011 | 0.70659 | 0.44158 | 0.38095 | 0.17676 | 0.15273 |
| 5.0 | 1.0 | 0.90782 | 0.83546 | 0.86797 | 0.06549 | 0.87562 | 0.90708 | 0.36382 | 0.90857 | 0.00018 | 0.90962 | 0.72799 | 0.38095 | 0.19681 | 0.15555 |
| 6.0 | 1.0 | 0.9372 | 0.88377 | 0.89974 | 0.0574 | 0.91773 | 0.9369 | 0.29274 | 0.93749 | 0.0002 | 0.94235 | 0.79804 | 0.38095 | 0.20177 | 0.16183 |
| 7.0 | 1.0 | 0.95912 | 0.923 | 0.94466 | 0.03096 | 0.94719 | 0.95897 | 0.19218 | 0.95928 | 0.00021 | 0.96386 | 0.86216 | 0.38095 | 0.22098 | 0.17408 |
| 8.0 | 1.0 | 0.95955 | 0.92321 | 0.92941 | 0.02578 | 0.94818 | 0.9591 | 0.16548 | 0.95999 | 0.00021 | 0.96473 | 0.86252 | 0.8 | 0.22767 | 0.18645 |
| 9.0 | 1.0 | 0.92984 | 0.86799 | 0.84844 | 0.039 | 0.91182 | 0.92753 | 0.22759 | 0.93217 | 0.00021 | 0.94106 | 0.77469 | 2.0 | 0.32936 | 0.19525 |
| 10.0 | 1.0 | 0.86696 | 0.76693 | 0.79403 | 0.07703 | 0.83635 | 0.86531 | 0.39422 | 0.86861 | 0.00021 | 0.90355 | 0.6304 | 2.0 | 0.27356 | 0.19617 |
| 11.0 | 1.0 | 0.85173 | 0.74332 | 0.81429 | 0.08594 | 0.82225 | 0.85109 | 0.46921 | 0.85238 | 0.00023 | 0.90585 | 0.59609 | 2.0 | 0.26207 | 0.2025 |
| 12.0 | 1.0 | 0.84098 | 0.72644 | 0.78095 | 0.09472 | 0.81155 | 0.83985 | 0.52022 | 0.84211 | 0.00024 | 0.90442 | 0.57467 | 2.0 | 0.25307 | 0.20481 |
| 13.0 | 1.0 | 0.82809 | 0.70659 | 0.76229 | 0.10588 | 0.79883 | 0.82678 | 0.55898 | 0.8294 | 0.00025 | 0.90354 | 0.54935 | 2.0 | 0.24889 | 0.21311 |
| 14.0 | 1.0 | 0.87053 | 0.77196 | 0.83885 | 0.09545 | 0.85045 | 0.87007 | 0.4851 | 0.87099 | 0.00029 | 0.93252 | 0.63247 | 2.0 | 0.24757 | 0.21446 |
| 15.0 | 1.0 | 0.87398 | 0.77712 | 0.83253 | 0.09353 | 0.8549 | 0.87341 | 0.47583 | 0.87455 | 0.00029 | 0.93544 | 0.63921 | 2.0 | 0.23819 | 0.21652 |
| 16.0 | 1.0 | 0.87901 | 0.78495 | 0.85307 | 0.09378 | 0.86158 | 0.8787 | 0.47908 | 0.87932 | 0.00031 | 0.94068 | 0.6487 | 2.0 | 0.23624 | 0.2171 |
| 17.0 | 1.0 | 0.88584 | 0.79579 | 0.85261 | 0.08841 | 0.86985 | 0.88541 | 0.45847 | 0.88626 | 0.00032 | 0.94515 | 0.66377 | 2.0 | 0.23251 | 0.22052 |
| 18.0 | 1.0 | 0.89026 | 0.80228 | 0.84341 | 0.08552 | 0.87523 | 0.88951 | 0.44982 | 0.89102 | 0.00032 | 0.94787 | 0.67254 | 2.0 | 0.23374 | 0.2241 |
| 19.0 | 1.0 | 0.89501 | 0.8097 | 0.84603 | 0.08355 | 0.88105 | 0.89422 | 0.44269 | 0.89581 | 0.00033 | 0.95122 | 0.68246 | 2.0 | 0.22601 | 0.22471 |
| 20.0 | 1.0 | 0.89749 | 0.81317 | 0.83985 | 0.08223 | 0.8841 | 0.89641 | 0.43702 | 0.89859 | 0.00034 | 0.95277 | 0.68712 | 2.0 | 0.22367 | 0.2248 |

Standard deviation of Adjusted Rand versus number of clusters
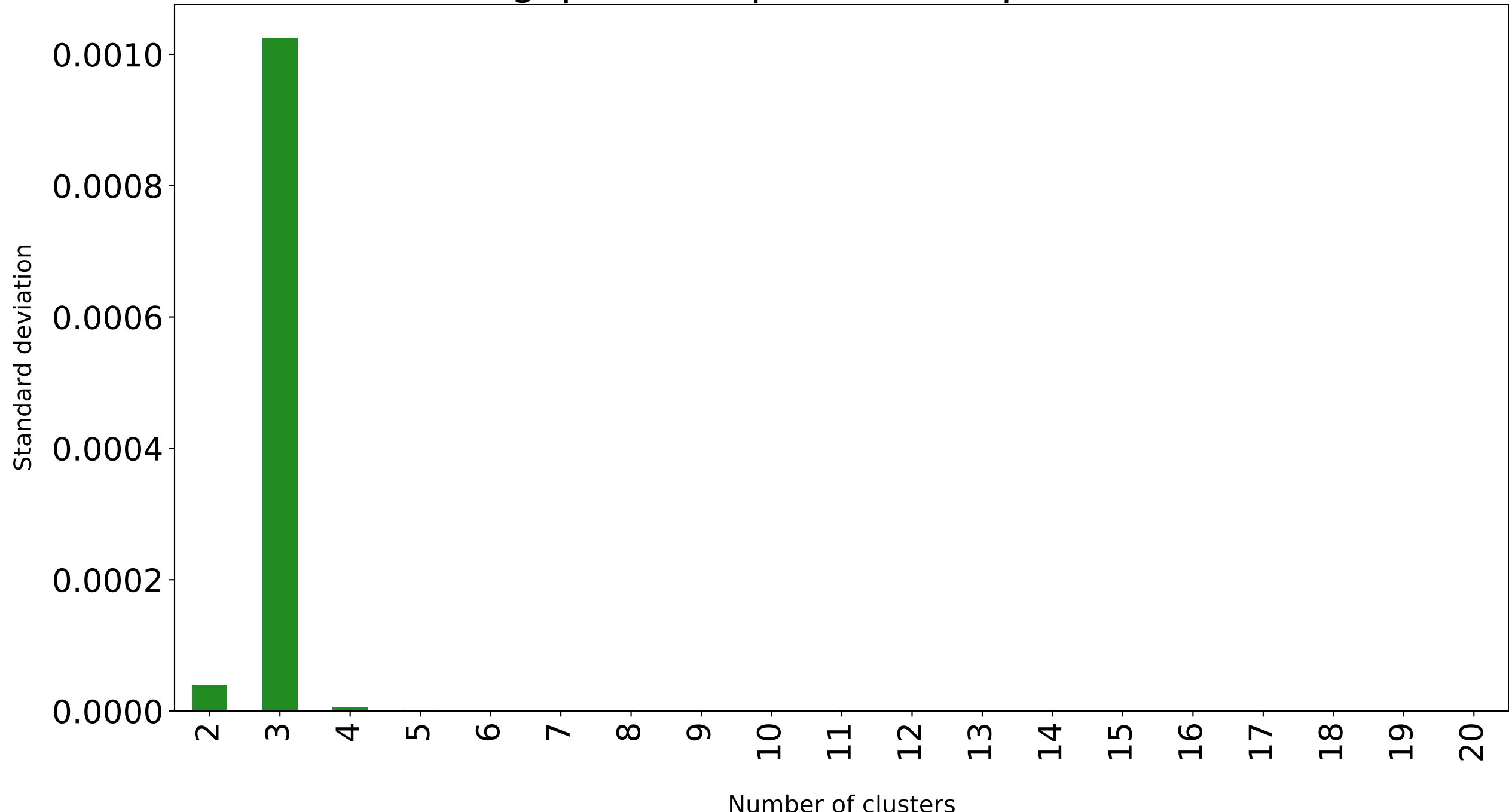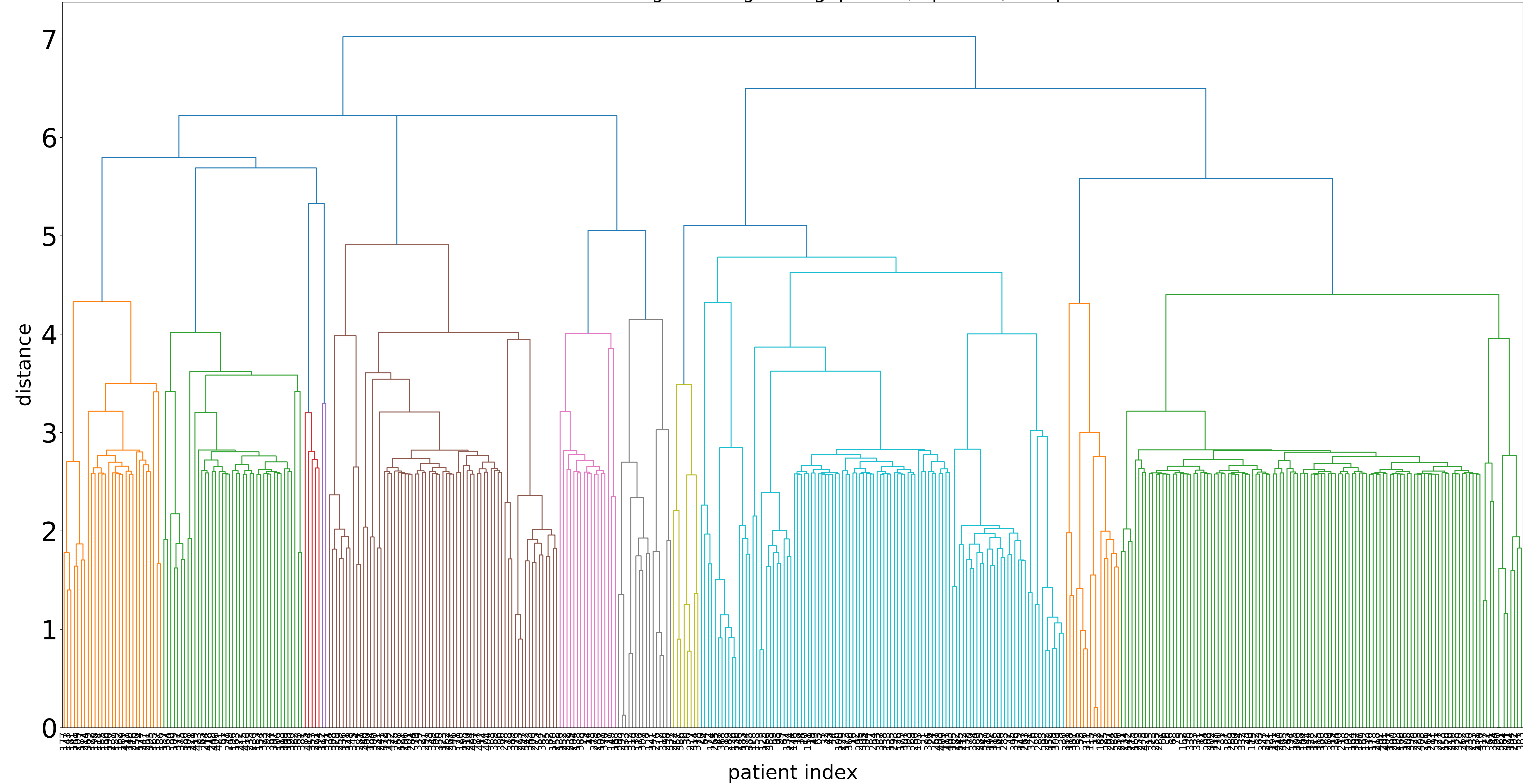gap: 0.20, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 0.30, Tp: 0.25, complete link

patient index

Cophenetic Correlation Coefficient: 0.7341554163827297

# Average values of five clustering indices
## gap: 0.30, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99996 | 0.78668 | 0.67736 | 0.55093 | 0.15771 | 0.53189 | 0.7855 | 0.63464 | 0.78789 | 8e-05 | 0.65624 | 0.55556 | 0.12195 | 0.12059 | 0.19283 |
| 3.0 | 1.00002 | 0.67506 | 0.5233 | 0.40123 | 0.23608 | 0.439 | 0.67175 | 0.97473 | 0.67841 | 7e-05 | 0.57921 | 0.37507 | 0.3125 | 0.13552 | 0.18393 |
| 4.0 | 1.0 | 0.76296 | 0.62281 | 0.72461 | 0.17323 | 0.66381 | 0.75896 | 0.80282 | 0.76704 | 0.00013 | 0.75329 | 0.46634 | 0.3125 | 0.17741 | 0.18962 |
| 5.0 | 1.0 | 0.84569 | 0.74056 | 0.81594 | 0.11463 | 0.79223 | 0.84409 | 0.59417 | 0.84733 | 0.00017 | 0.85399 | 0.60417 | 0.3125 | 0.21201 | 0.19067 |
| 6.0 | 1.0 | 0.8796 | 0.79059 | 0.82427 | 0.0905 | 0.84244 | 0.87901 | 0.51113 | 0.88019 | 0.00018 | 0.89344 | 0.6654 | 0.3125 | 0.22076 | 0.1961 |
| 7.0 | 1.0 | 0.90358 | 0.82889 | 0.85336 | 0.06487 | 0.87571 | 0.90299 | 0.4109 | 0.90417 | 0.0002 | 0.91754 | 0.7198 | 0.33333 | 0.23512 | 0.20544 |
| 8.0 | 1.0 | 0.90641 | 0.83215 | 0.84151 | 0.05854 | 0.88088 | 0.90524 | 0.36245 | 0.90759 | 0.0002 | 0.92206 | 0.7239 | 1.14286 | 0.2284 | 0.21841 |
| 9.0 | 1.0 | 0.88921 | 0.80398 | 0.87447 | 0.07205 | 0.86278 | 0.88855 | 0.41456 | 0.88986 | 0.00022 | 0.918 | 0.68168 | 1.14286 | 0.20518 | 0.22796 |
| 10.0 | 1.0 | 0.86493 | 0.76478 | 0.79879 | 0.08547 | 0.83483 | 0.86348 | 0.45273 | 0.86638 | 0.00022 | 0.90505 | 0.62869 | 2.0 | 0.20708 | 0.2489 |
| 11.0 | 1.0 | 0.83777 | 0.72389 | 0.82491 | 0.10677 | 0.80657 | 0.83685 | 0.53756 | 0.83868 | 0.00024 | 0.90006 | 0.57498 | 2.0 | 0.19131 | 0.2514 |
| 12.0 | 1.0 | 0.84283 | 0.73159 | 0.81031 | 0.10474 | 0.81414 | 0.84203 | 0.53691 | 0.84363 | 0.00025 | 0.90719 | 0.58455 | 2.0 | 0.1821 | 0.25699 |
| 13.0 | 1.0 | 0.84466 | 0.73346 | 0.80278 | 0.10462 | 0.81837 | 0.84381 | 0.5514 | 0.84552 | 0.00026 | 0.91349 | 0.58546 | 2.0 | 0.18384 | 0.26635 |
| 14.0 | 1.0 | 0.88894 | 0.80199 | 0.90019 | 0.09793 | 0.87232 | 0.88806 | 0.48148 | 0.88982 | 0.00031 | 0.94316 | 0.67619 | 2.0 | 0.17723 | 0.26796 |
| 15.0 | 1.0 | 0.90495 | 0.82802 | 0.90381 | 0.09097 | 0.89125 | 0.90453 | 0.45066 | 0.90537 | 0.00032 | 0.95298 | 0.71164 | 2.0 | 0.18251 | 0.27135 |
| 16.0 | 1.0 | 0.90912 | 0.83489 | 0.90191 | 0.09028 | 0.89633 | 0.90878 | 0.44766 | 0.90945 | 0.00033 | 0.95598 | 0.72122 | 2.0 | 0.18791 | 0.27518 |
| 17.0 | 1.0 | 0.91015 | 0.83644 | 0.89068 | 0.08987 | 0.89772 | 0.90986 | 0.44558 | 0.91043 | 0.00033 | 0.95714 | 0.72295 | 2.0 | 0.19297 | 0.27574 |
| 18.0 | 1.0 | 0.91297 | 0.84101 | 0.88991 | 0.08949 | 0.90128 | 0.91268 | 0.43851 | 0.91326 | 0.00034 | 0.95947 | 0.72939 | 2.0 | 0.20045 | 0.28669 |
| 19.0 | 1.0 | 0.91013 | 0.836 | 0.88601 | 0.09174 | 0.8984 | 0.90986 | 0.44947 | 0.91041 | 0.00035 | 0.95917 | 0.72135 | 2.0 | 0.1928 | 0.28678 |
| 20.0 | 1.0 | 0.92437 | 0.86018 | 0.92215 | 0.08535 | 0.91495 | 0.92416 | 0.42312 | 0.92458 | 0.00037 | 0.96694 | 0.75752 | 2.0 | 0.18919 | 0.28726 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.30, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 0.40, Tp: 0.25, complete link

patient index

Cophenetic Correlation Coefficient: 0.6871868097142786

## Average values of five clustering indices
## gap: 0.40, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 0.99994 | 0.74743 | 0.62059 | 0.47898 | 0.18698 | 0.45448 | 0.74606 | 0.74444 | 0.74882 | 7e-05 | 0.60003 | 0.48286 | 0.13559 | 0.12046 | 0.19964 |
| 3.0 | 1.00001 | 0.69192 | 0.54042 | 0.55454 | 0.20257 | 0.50683 | 0.68884 | 0.86357 | 0.69505 | 9e-05 | 0.62997 | 0.38912 | 0.13559 | 0.19011 | 0.20842 |
| 4.0 | 1.0 | 0.7401 | 0.59195 | 0.71854 | 0.17104 | 0.63506 | 0.73491 | 0.82941 | 0.7454 | 0.00012 | 0.7354 | 0.43421 | 0.16 | 0.18519 | 0.20854 |
| 5.0 | 1.0 | 0.79986 | 0.6736 | 0.78933 | 0.13765 | 0.73245 | 0.79707 | 0.7395 | 0.80271 | 0.00016 | 0.81598 | 0.52311 | 0.24242 | 0.19519 | 0.22376 |
| 6.0 | 1.0 | 0.81961 | 0.69986 | 0.81436 | 0.12174 | 0.76569 | 0.81781 | 0.68932 | 0.82144 | 0.00017 | 0.84607 | 0.55002 | 0.25 | 0.2183 | 0.22795 |
| 7.0 | 1.0 | 0.83557 | 0.72287 | 0.80942 | 0.10839 | 0.78917 | 0.83446 | 0.62792 | 0.8367 | 0.00018 | 0.86512 | 0.57669 | 0.57143 | 0.20897 | 0.23237 |
| 8.0 | 1.0 | 0.83904 | 0.72678 | 0.83345 | 0.10528 | 0.79879 | 0.83773 | 0.61433 | 0.84036 | 0.0002 | 0.87827 | 0.58064 | 0.57143 | 0.20791 | 0.24338 |
| 9.0 | 1.0 | 0.83486 | 0.72105 | 0.78865 | 0.10752 | 0.79606 | 0.83396 | 0.6122 | 0.83576 | 0.0002 | 0.88164 | 0.57346 | 2.0 | 0.21469 | 0.25402 |
| 10.0 | 1.0 | 0.81517 | 0.69051 | 0.75186 | 0.12389 | 0.77526 | 0.81408 | 0.67605 | 0.81627 | 0.00021 | 0.87608 | 0.53352 | 2.0 | 0.21598 | 0.24167 |
| 11.0 | 1.0 | 0.81019 | 0.68274 | 0.72855 | 0.12295 | 0.77121 | 0.80853 | 0.65743 | 0.81187 | 0.00021 | 0.87703 | 0.5247 | 2.0 | 0.21643 | 0.24882 |
| 12.0 | 1.0 | 0.81352 | 0.6855 | 0.71962 | 0.12172 | 0.77766 | 0.81099 | 0.61549 | 0.81608 | 0.00022 | 0.88394 | 0.52671 | 2.0 | 0.20483 | 0.25531 |
| 13.0 | 1.0 | 0.81117 | 0.68309 | 0.73054 | 0.13445 | 0.77793 | 0.80932 | 0.67235 | 0.81302 | 0.00024 | 0.89138 | 0.52379 | 2.0 | 0.18613 | 0.25498 |
| 14.0 | 1.0 | 0.84055 | 0.72603 | 0.80416 | 0.12207 | 0.81534 | 0.83997 | 0.63337 | 0.84113 | 0.00027 | 0.9162 | 0.57307 | 2.0 | 0.18564 | 0.26807 |
| 15.0 | 1.0 | 0.88127 | 0.78901 | 0.88441 | 0.11529 | 0.86409 | 0.88067 | 0.56159 | 0.88187 | 0.00031 | 0.94131 | 0.65587 | 2.0 | 0.17937 | 0.27264 |
| 16.0 | 1.0 | 0.88734 | 0.79873 | 0.88294 | 0.11336 | 0.87148 | 0.88695 | 0.5506 | 0.88774 | 0.00032 | 0.94565 | 0.66866 | 2.0 | 0.18625 | 0.27315 |
| 17.0 | 1.0 | 0.89156 | 0.80558 | 0.87695 | 0.10857 | 0.87655 | 0.89126 | 0.52828 | 0.89186 | 0.00032 | 0.94847 | 0.67801 | 2.0 | 0.1963 | 0.2736 |
| 18.0 | 1.0 | 0.89093 | 0.80437 | 0.86647 | 0.10875 | 0.87609 | 0.89062 | 0.52558 | 0.89124 | 0.00033 | 0.94891 | 0.676 | 2.0 | 0.20617 | 0.28441 |
| 19.0 | 1.0 | 0.8874 | 0.79813 | 0.85314 | 0.10979 | 0.87237 | 0.88697 | 0.53022 | 0.88783 | 0.00033 | 0.94804 | 0.66661 | 2.0 | 0.21262 | 0.29368 |
| 20.0 | 1.0 | 0.88613 | 0.79584 | 0.85069 | 0.11115 | 0.87134 | 0.8857 | 0.53451 | 0.88655 | 0.00034 | 0.94869 | 0.66293 | 2.0 | 0.20846 | 0.29377 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.40, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 0.50, Tp: 0.25, complete link
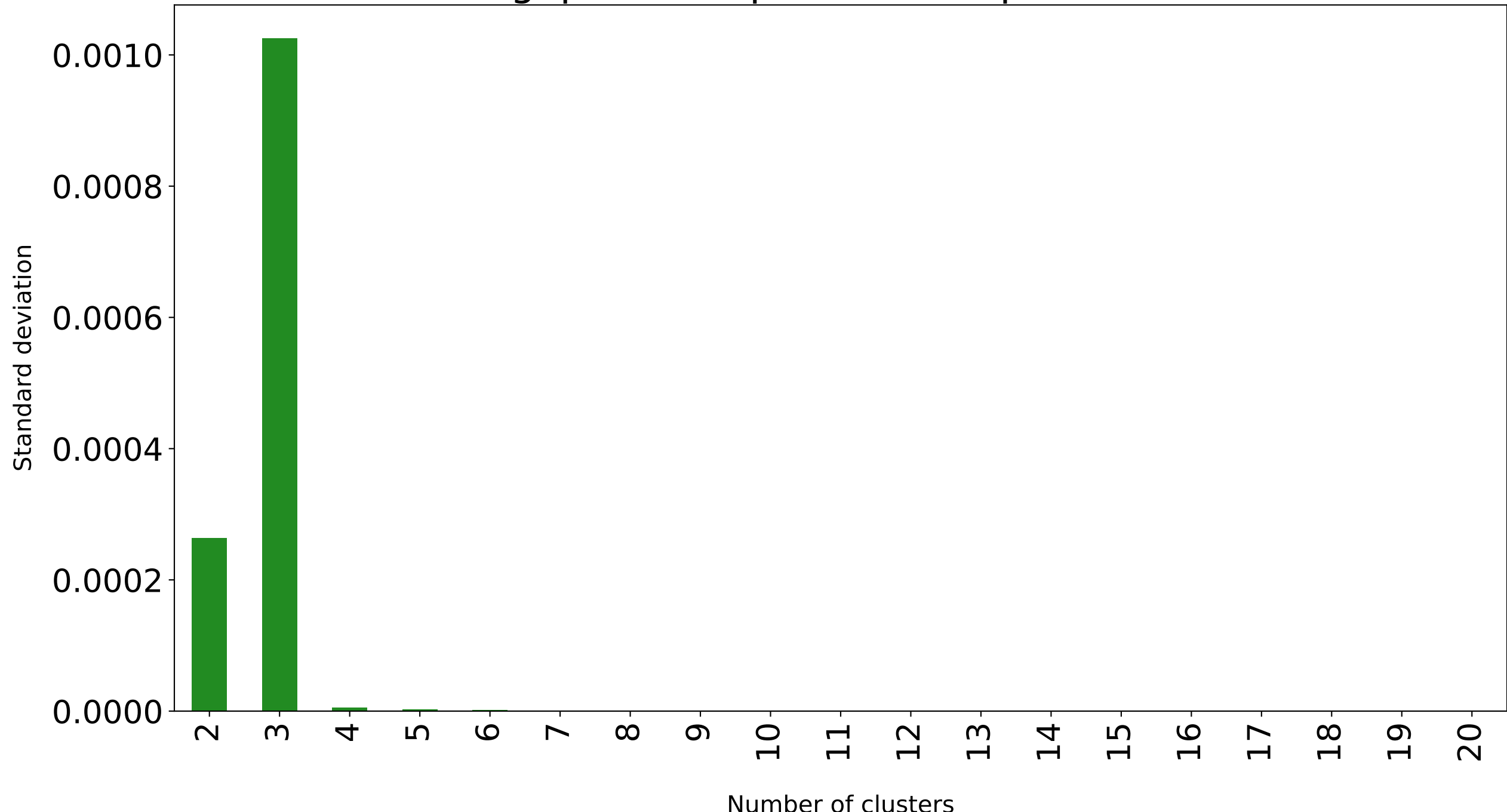
distance

patient index
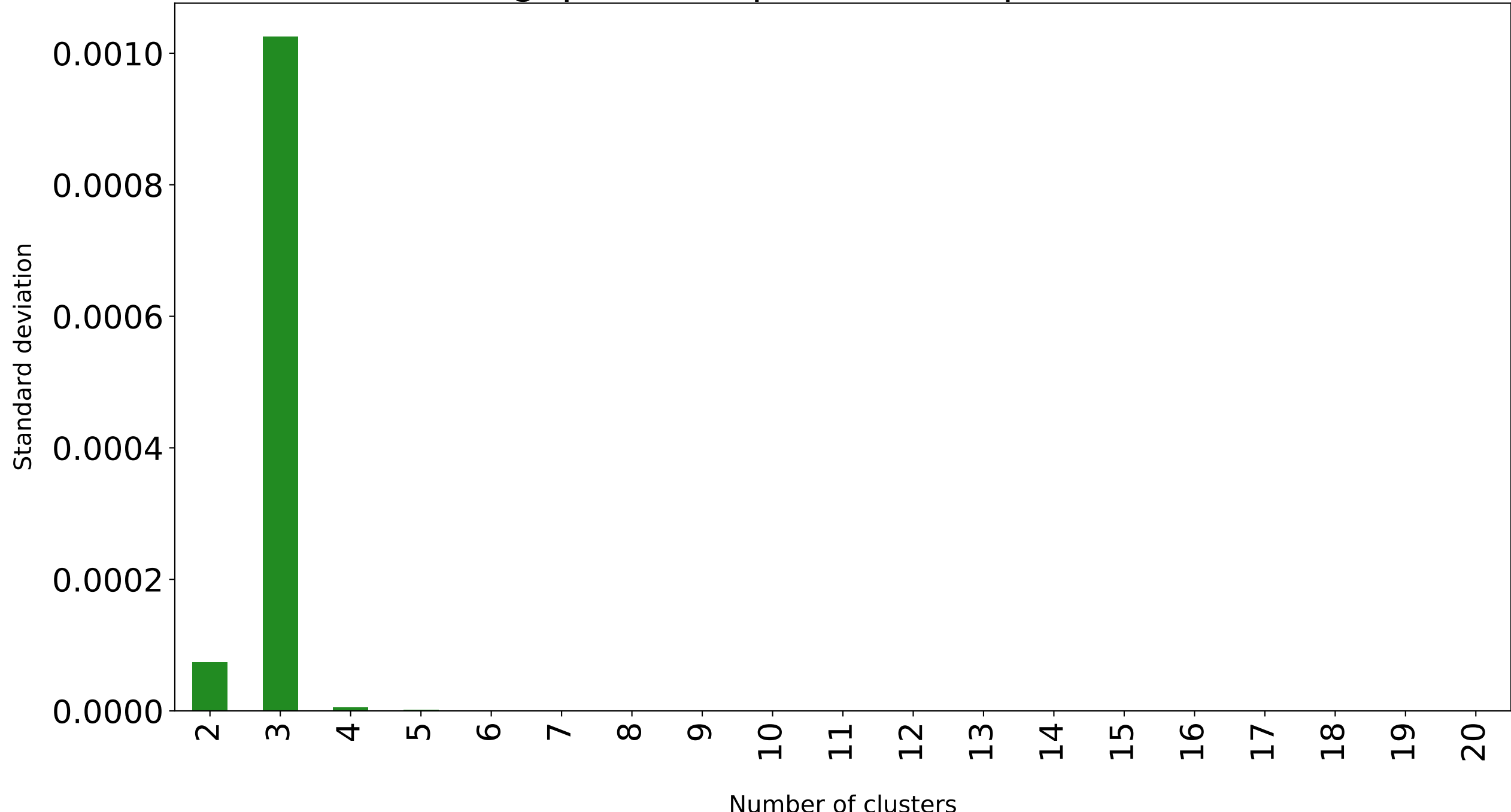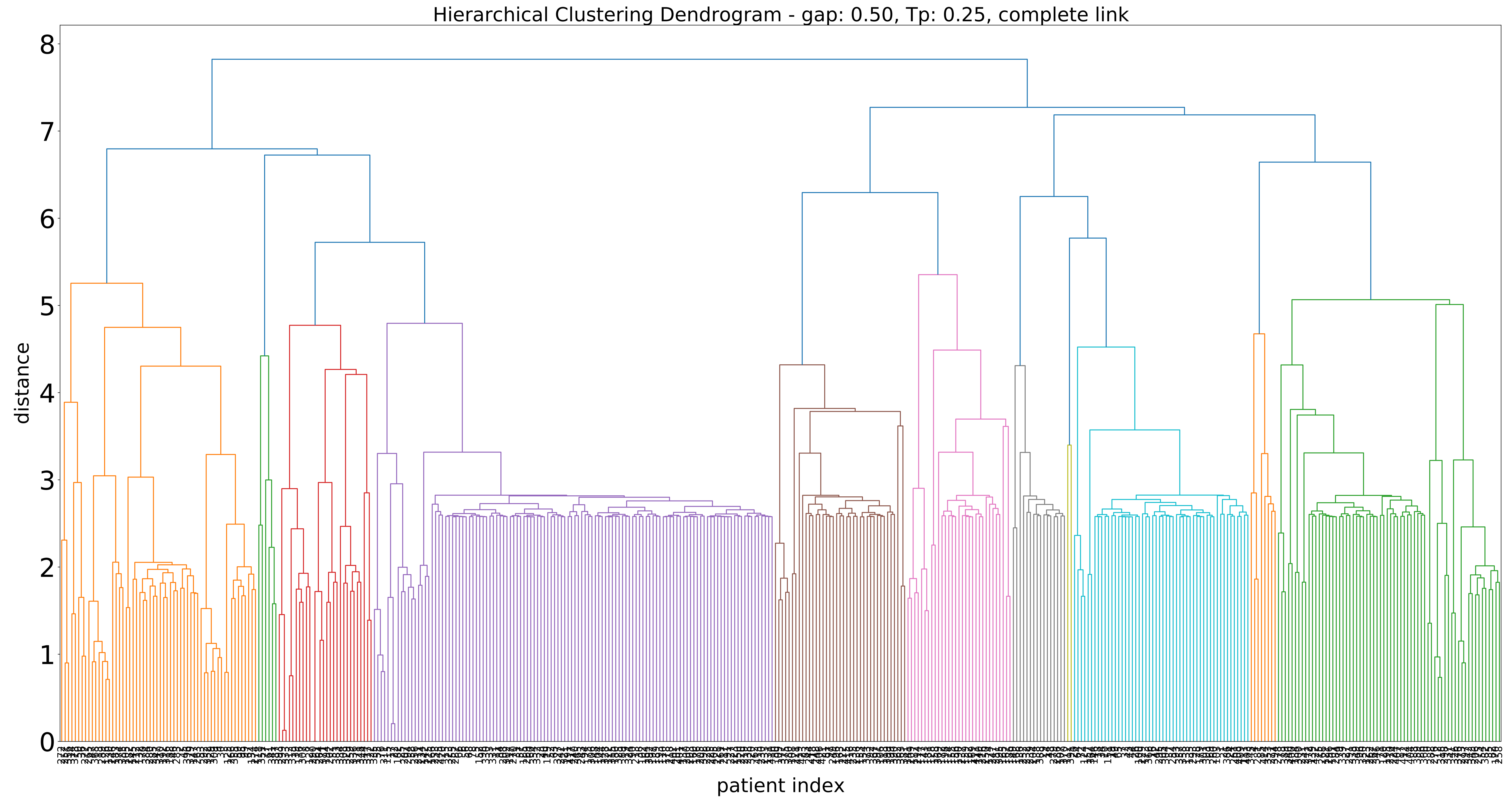
Cophenetic Correlation Coefficient: 0.6782640995793605

## Average values of five clustering indices
## gap: 0.50, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 2.0 | 0.99983 | 0.66544 | 0.50361 | 0.29935 | 0.24069 | 0.27806 | 0.66267 | 0.94873 | 0.66828 | 4e-05 | 0.47883 | 0.34449 | 0.09346 | 0.13752 | 0.17606 |
| 3.0 | 1.00002 | 0.59827 | 0.43187 | 0.34697 | 0.30029 | 0.32907 | 0.59591 | 1.22446 | 0.60067 | 5e-05 | 0.51592 | 0.28193 | 0.17143 | 0.15002 | 0.17818 |
| 4.0 | 1.00001 | 0.63292 | 0.4669 | 0.44206 | 0.24719 | 0.45686 | 0.63054 | 1.14164 | 0.63531 | 8e-05 | 0.61689 | 0.31049 | 0.17143 | 0.17385 | 0.18839 |
| 5.0 | 1.0 | 0.72477 | 0.57577 | 0.69262 | 0.19686 | 0.63119 | 0.72131 | 0.94424 | 0.72831 | 0.00013 | 0.75434 | 0.41695 | 0.17143 | 0.17069 | 0.19039 |
| 6.0 | 1.0 | 0.74175 | 0.59564 | 0.6995 | 0.19147 | 0.66351 | 0.74009 | 0.91372 | 0.74342 | 0.00015 | 0.78597 | 0.43356 | 0.66667 | 0.20224 | 0.19271 |
| 7.0 | 1.0 | 0.75021 | 0.60576 | 0.69165 | 0.18729 | 0.68028 | 0.74931 | 0.88336 | 0.75111 | 0.00016 | 0.8038 | 0.44241 | 0.66667 | 0.21272 | 0.2034 |
| 8.0 | 1.0 | 0.78217 | 0.64679 | 0.73374 | 0.15055 | 0.72662 | 0.78131 | 0.76055 | 0.78303 | 0.00018 | 0.83764 | 0.48561 | 0.66667 | 0.23404 | 0.20486 |
| 9.0 | 1.0 | 0.81265 | 0.68858 | 0.76292 | 0.12253 | 0.76851 | 0.81168 | 0.64911 | 0.81363 | 0.0002 | 0.86658 | 0.53343 | 0.66667 | 0.2485 | 0.22179 |
| 10.0 | 1.0 | 0.8208 | 0.69922 | 0.74675 | 0.11335 | 0.7806 | 0.81948 | 0.60902 | 0.82213 | 0.00021 | 0.87605 | 0.54562 | 2.0 | 0.231 | 0.22367 |
| 11.0 | 1.0 | 0.8316 | 0.71392 | 0.83443 | 0.11773 | 0.79972 | 0.83047 | 0.60685 | 0.83272 | 0.00024 | 0.8974 | 0.56132 | 2.0 | 0.20083 | 0.23917 |
| 12.0 | 1.0 | 0.83273 | 0.71616 | 0.81635 | 0.12043 | 0.80224 | 0.83204 | 0.62286 | 0.83342 | 0.00024 | 0.90161 | 0.56403 | 2.0 | 0.2105 | 0.24364 |
| 13.0 | 1.0 | 0.8342 | 0.71756 | 0.80122 | 0.12241 | 0.80577 | 0.8335 | 0.64175 | 0.83491 | 0.00025 | 0.907 | 0.56448 | 2.0 | 0.20363 | 0.25272 |
| 14.0 | 1.0 | 0.83015 | 0.71161 | 0.80784 | 0.12837 | 0.80323 | 0.82953 | 0.65595 | 0.83077 | 0.00027 | 0.91084 | 0.55716 | 2.0 | 0.19883 | 0.25551 |
| 15.0 | 1.0 | 0.83241 | 0.71399 | 0.78847 | 0.12437 | 0.80683 | 0.83171 | 0.64344 | 0.83311 | 0.00028 | 0.91452 | 0.55867 | 2.0 | 0.2001 | 0.267 |
| 16.0 | 1.0 | 0.87911 | 0.78501 | 0.88 | 0.11006 | 0.86224 | 0.87865 | 0.5536 | 0.87956 | 0.00032 | 0.94218 | 0.64897 | 2.0 | 0.20957 | 0.26826 |
| 17.0 | 1.0 | 0.89234 | 0.80625 | 0.8893 | 0.10052 | 0.87771 | 0.89201 | 0.51101 | 0.89267 | 0.00033 | 0.94956 | 0.67789 | 2.0 | 0.20915 | 0.26961 |
| 18.0 | 1.0 | 0.90281 | 0.82341 | 0.91353 | 0.09985 | 0.89007 | 0.90232 | 0.49898 | 0.90331 | 0.00034 | 0.95556 | 0.70288 | 2.0 | 0.2022 | 0.2739 |
| 19.0 | 1.0 | 0.90617 | 0.82917 | 0.90683 | 0.09841 | 0.89402 | 0.90587 | 0.49015 | 0.90648 | 0.00035 | 0.95767 | 0.71095 | 2.0 | 0.20747 | 0.28306 |
| 20.0 | 1.0 | 0.91501 | 0.84397 | 0.9144 | 0.09516 | 0.90427 | 0.91473 | 0.46411 | 0.91528 | 0.00036 | 0.9624 | 0.73264 | 2.0 | 0.21211 | 0.28525 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.50, Tp: 0.25, complete link

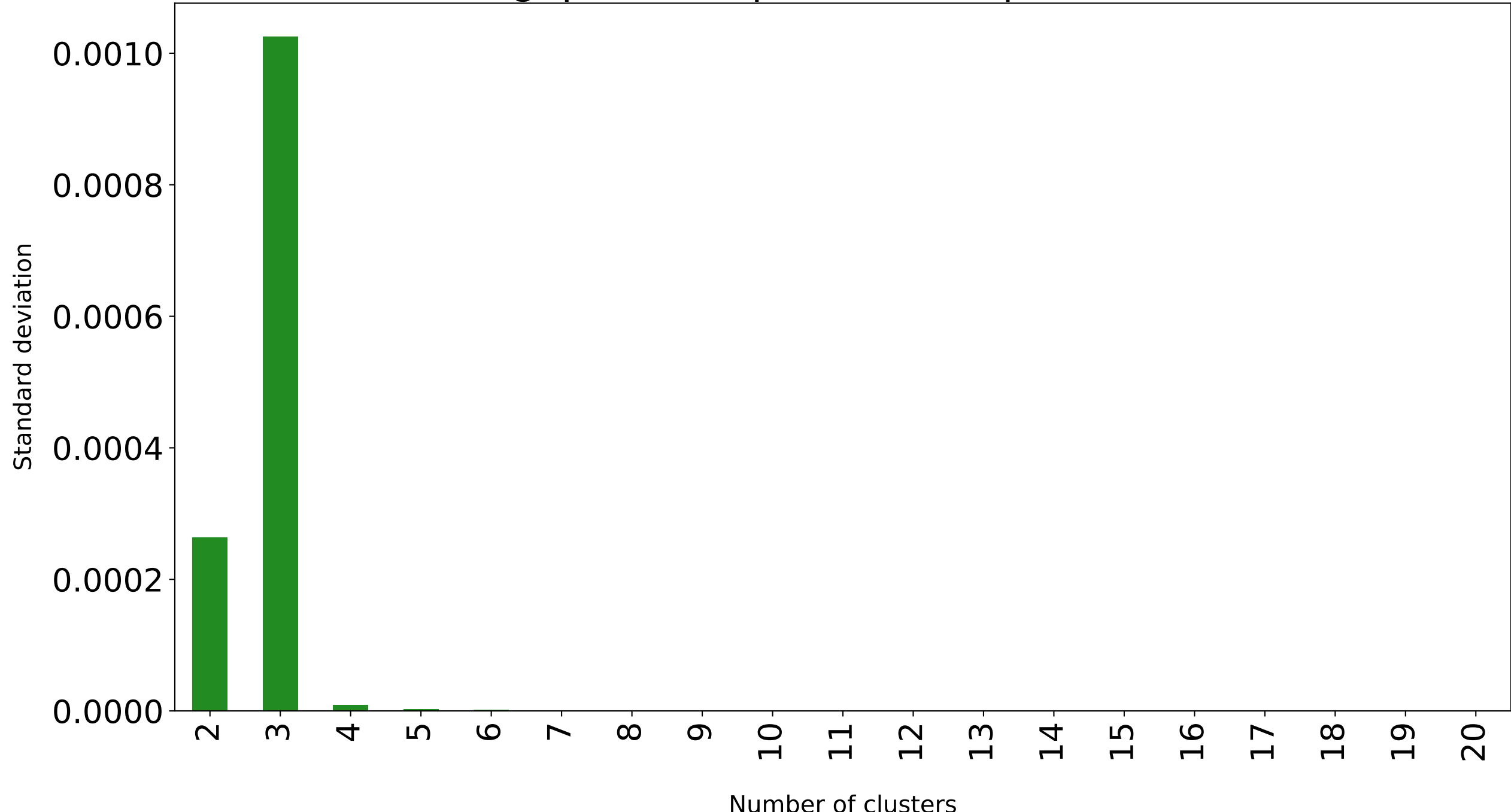Hierarchical Clustering Dendrogram - gap: 0.60, Tp: 0.25, complete link
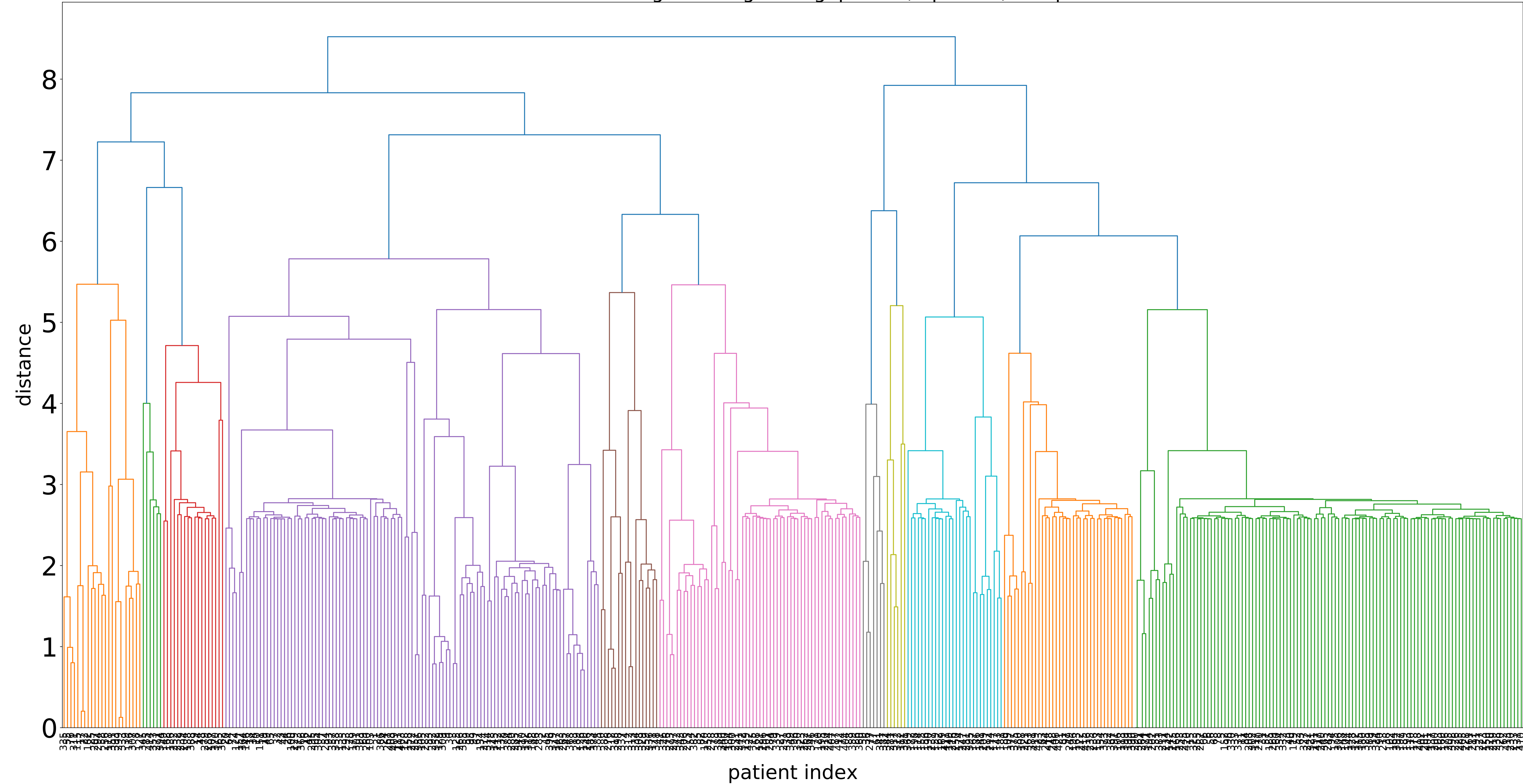
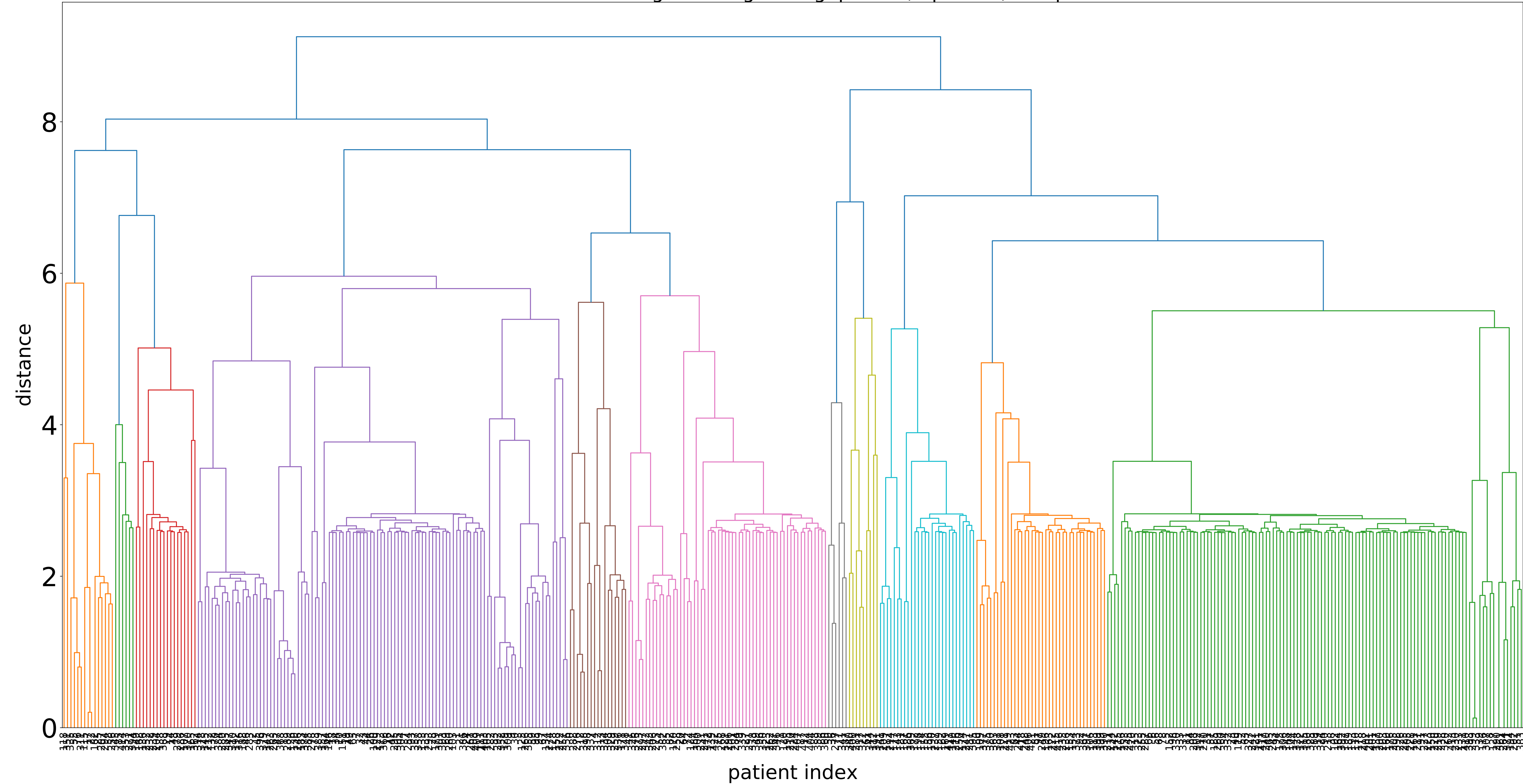Cophenetic Correlation Coefficient: 0.6332444160071892

## Average values of five clustering indices
## gap: 0.60, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.99989 | 0.60671 | 0.43134 | 0.11027 | 0.30699 | 0.09752 | 0.59936 | 1.08898 | 0.61436 | 2e-05 | 0.38158 | 0.27776 | 0.08621 | 0.12412 | 0.18894 |
| 3.0 | 1.00002 | 0.55821 | 0.38852 | 0.16572 | 0.33145 | 0.1799 | 0.55492 | 1.30971 | 0.56155 | 3e-05 | 0.42243 | 0.24492 | 0.30769 | 0.1626 | 0.19114 |
| 4.0 | 1.00001 | 0.54714 | 0.37822 | 0.25986 | 0.32818 | 0.28819 | 0.54401 | 1.43262 | 0.55031 | 5e-05 | 0.50499 | 0.23672 | 0.51064 | 0.13558 | 0.20468 |
| 5.0 | 1.00001 | 0.61799 | 0.45174 | 0.45942 | 0.25426 | 0.46097 | 0.6158 | 1.23721 | 0.6202 | 9e-05 | 0.63731 | 0.2982 | 0.51064 | 0.17589 | 0.19103 |
| 6.0 | 1.0 | 0.63267 | 0.46536 | 0.46066 | 0.23357 | 0.49703 | 0.62984 | 1.18228 | 0.63552 | 0.0001 | 0.66876 | 0.30843 | 0.66667 | 0.18539 | 0.20534 |
| 7.0 | 1.0 | 0.70231 | 0.54489 | 0.59329 | 0.19228 | 0.61359 | 0.70076 | 1.00259 | 0.70386 | 0.00014 | 0.75947 | 0.38024 | 0.66667 | 0.19265 | 0.20714 |
| 8.0 | 1.0 | 0.71426 | 0.55727 | 0.58671 | 0.17913 | 0.63456 | 0.71175 | 0.94168 | 0.71679 | 0.00015 | 0.77624 | 0.39138 | 0.66667 | 0.22505 | 0.21645 |
| 9.0 | 1.0 | 0.71414 | 0.55359 | 0.56409 | 0.17553 | 0.639 | 0.70954 | 0.92113 | 0.71879 | 0.00015 | 0.78172 | 0.38662 | 1.33333 | 0.2337 | 0.21799 |
| 10.0 | 1.0 | 0.71828 | 0.55676 | 0.56663 | 0.17521 | 0.65045 | 0.71299 | 0.89525 | 0.72363 | 0.00016 | 0.79586 | 0.38872 | 1.33333 | 0.21578 | 0.22751 |
| 11.0 | 1.0 | 0.80016 | 0.66891 | 0.74234 | 0.1368 | 0.75967 | 0.79926 | 0.71903 | 0.80107 | 0.00021 | 0.87318 | 0.50737 | 1.33333 | 0.2166 | 0.23866 |
| 12.0 | 1.0 | 0.80825 | 0.67865 | 0.82591 | 0.13921 | 0.77483 | 0.80646 | 0.72064 | 0.81005 | 0.00024 | 0.89056 | 0.51801 | 1.33333 | 0.2042 | 0.25233 |
| 13.0 | 1.0 | 0.82131 | 0.698 | 0.82292 | 0.1283 | 0.79118 | 0.82022 | 0.68268 | 0.82241 | 0.00025 | 0.90104 | 0.54041 | 1.33333 | 0.20232 | 0.25266 |
| 14.0 | 1.0 | 0.82919 | 0.70944 | 0.82957 | 0.12832 | 0.80227 | 0.82811 | 0.67342 | 0.83028 | 0.00027 | 0.91026 | 0.55426 | 1.33333 | 0.20882 | 0.25716 |
| 15.0 | 1.0 | 0.84538 | 0.73362 | 0.82149 | 0.12007 | 0.82193 | 0.84471 | 0.63196 | 0.84604 | 0.00028 | 0.92135 | 0.58348 | 1.33333 | 0.21759 | 0.26513 |
| 16.0 | 1.0 | 0.85145 | 0.74209 | 0.80635 | 0.11761 | 0.82962 | 0.85072 | 0.617 | 0.85218 | 0.00029 | 0.92615 | 0.59325 | 2.0 | 0.21899 | 0.26763 |
| 17.0 | 1.0 | 0.85958 | 0.75459 | 0.82779 | 0.11823 | 0.83993 | 0.85914 | 0.61837 | 0.86002 | 0.00031 | 0.93309 | 0.60859 | 2.0 | 0.21962 | 0.26768 |
| 18.0 | 1.0 | 0.89211 | 0.8061 | 0.89047 | 0.11221 | 0.87791 | 0.89176 | 0.55884 | 0.89246 | 0.00034 | 0.95082 | 0.67816 | 2.0 | 0.20894 | 0.27201 |
| 19.0 | 1.0 | 0.89912 | 0.81746 | 0.89809 | 0.10967 | 0.88616 | 0.89878 | 0.53874 | 0.89945 | 0.00035 | 0.95489 | 0.69403 | 2.0 | 0.21704 | 0.27245 |
| 20.0 | 1.0 | 0.90777 | 0.83193 | 0.90381 | 0.10252 | 0.89621 | 0.9075 | 0.51142 | 0.90804 | 0.00036 | 0.95958 | 0.71501 | 2.0 | 0.2164 | 0.2746 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.60, Tp: 0.25, complete link

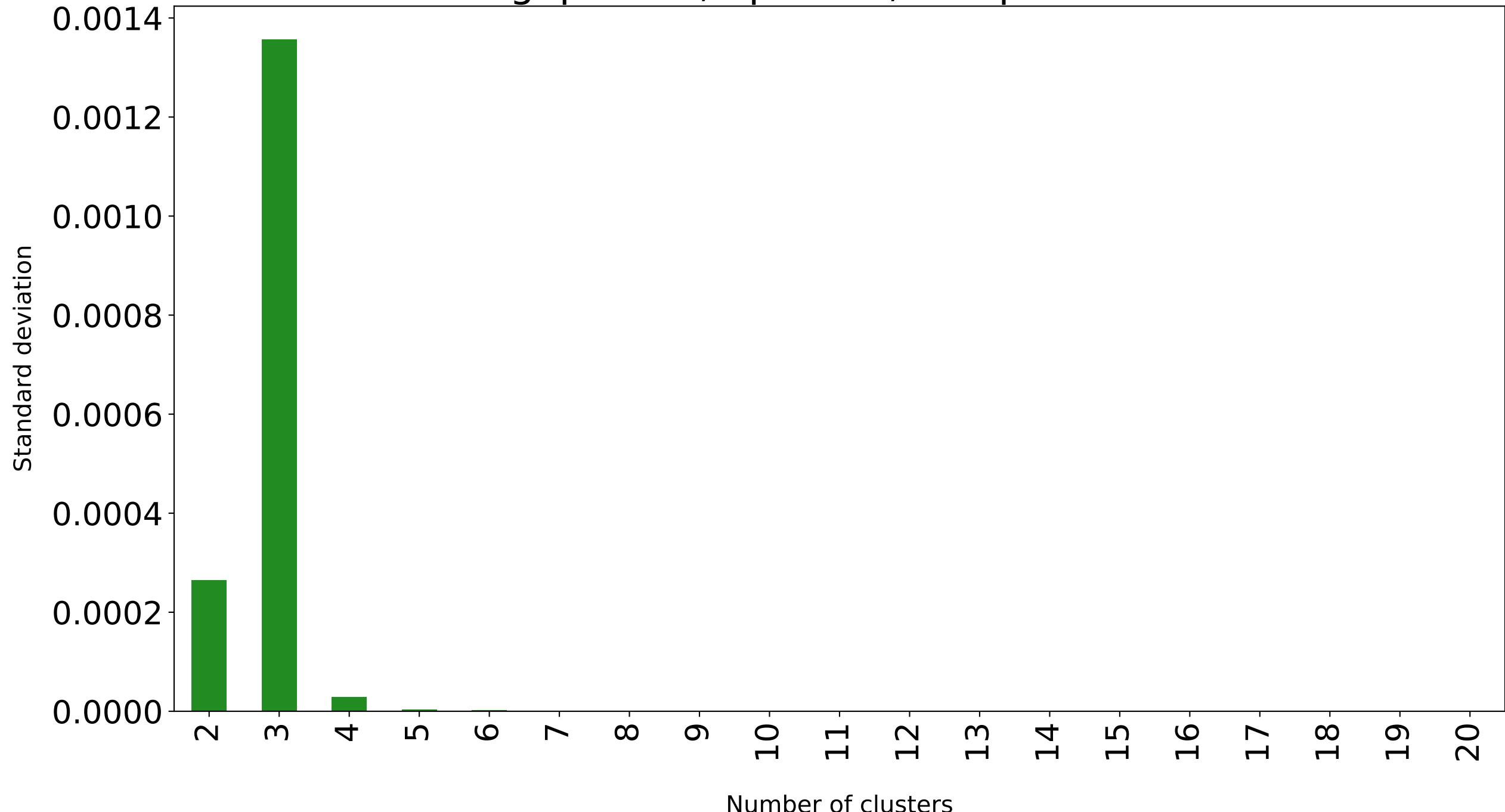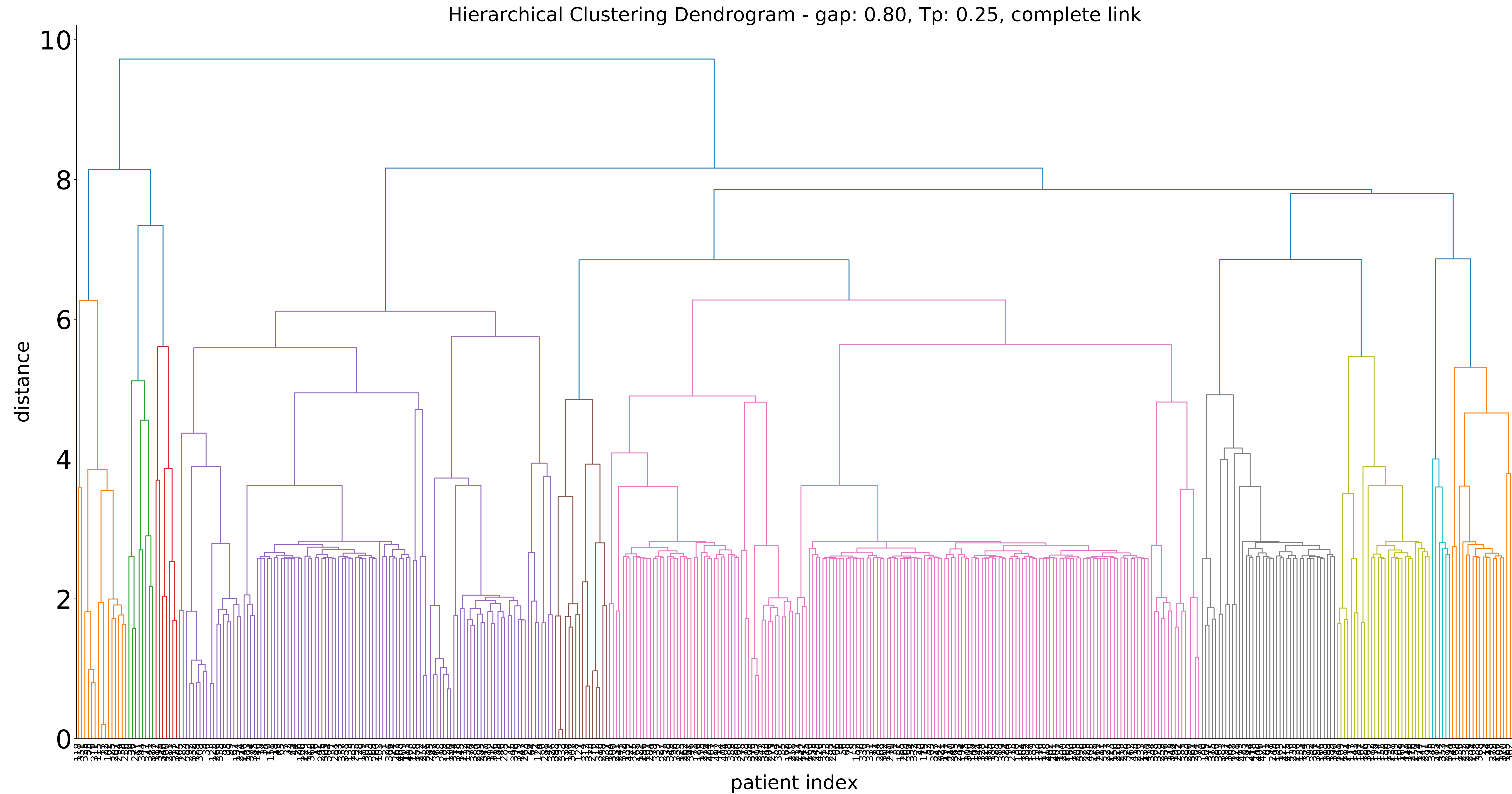Hierarchical Clustering Dendrogram - gap: 0.70, Tp: 0.25, complete link

Cophenetic Correlation Coefficient: 0.6307419544840157

# Average values of five clustering indices
## gap: 0.70, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 0.9999 | 0.62341 | 0.44312 | 0.10608 | 0.29306 | 0.08998 | 0.61168 | 1.03652 | 0.63566 | 1e-05 | 0.37629 | 0.28652 | 0.05005 | 0.12552 | 0.18996 |
| 3.0 | 0.99998 | 0.57291 | 0.40316 | 0.18495 | 0.32221 | 0.17999 | 0.57006 | 1.28488 | 0.57581 | 3e-05 | 0.42129 | 0.2562 | 0.14815 | 0.15379 | 0.19912 |
| 4.0 | 1.00002 | 0.54613 | 0.37925 | 0.25012 | 0.33471 | 0.26338 | 0.54403 | 1.45281 | 0.54826 | 4e-05 | 0.48596 | 0.23857 | 0.34188 | 0.12576 | 0.20966 |
| 5.0 | 1.00001 | 0.58927 | 0.42331 | 0.41145 | 0.27847 | 0.40833 | 0.58737 | 1.35002 | 0.59118 | 8e-05 | 0.60115 | 0.27529 | 0.34188 | 0.15871 | 0.19423 |
| 6.0 | 1.00001 | 0.60799 | 0.43996 | 0.41574 | 0.25231 | 0.45554 | 0.6049 | 1.26779 | 0.61112 | 9e-05 | 0.63979 | 0.28762 | 0.37037 | 0.19688 | 0.21077 |
| 7.0 | 1.0 | 0.65533 | 0.49058 | 0.52358 | 0.22355 | 0.54762 | 0.65332 | 1.15394 | 0.65736 | 0.00012 | 0.71763 | 0.33017 | 0.37037 | 0.20452 | 0.21323 |
| 8.0 | 1.0 | 0.67332 | 0.509 | 0.52375 | 0.20729 | 0.57799 | 0.67004 | 1.08961 | 0.67662 | 0.00013 | 0.74 | 0.34652 | 0.37037 | 0.22142 | 0.21886 |
| 9.0 | 1.0 | 0.68231 | 0.5153 | 0.51333 | 0.1941 | 0.59616 | 0.67665 | 1.03749 | 0.68804 | 0.00014 | 0.75406 | 0.35092 | 0.37037 | 0.24736 | 0.22662 |
| 10.0 | 1.0 | 0.68965 | 0.52205 | 0.52044 | 0.1898 | 0.61213 | 0.68307 | 1.00114 | 0.69631 | 0.00015 | 0.77046 | 0.35653 | 0.37037 | 0.23049 | 0.23025 |
| 11.0 | 1.0 | 0.77449 | 0.63511 | 0.69722 | 0.14784 | 0.72729 | 0.77315 | 0.80379 | 0.77584 | 0.0002 | 0.85435 | 0.47183 | 0.37037 | 0.23037 | 0.24833 |
| 12.0 | 1.0 | 0.78133 | 0.64315 | 0.75089 | 0.14769 | 0.7413 | 0.7806 | 0.80982 | 0.78206 | 0.00022 | 0.87286 | 0.47797 | 0.37037 | 0.21569 | 0.25217 |
| 13.0 | 1.0 | 0.78729 | 0.65064 | 0.73078 | 0.14514 | 0.74992 | 0.78633 | 0.78645 | 0.78825 | 0.00023 | 0.87984 | 0.48589 | 2.0 | 0.21581 | 0.25532 |
| 14.0 | 1.0 | 0.80612 | 0.6766 | 0.76675 | 0.13804 | 0.77504 | 0.8054 | 0.73952 | 0.80684 | 0.00026 | 0.89788 | 0.51474 | 2.0 | 0.21147 | 0.25956 |
| 15.0 | 1.0 | 0.80802 | 0.67917 | 0.77193 | 0.13874 | 0.77903 | 0.80738 | 0.74198 | 0.80867 | 0.00027 | 0.9037 | 0.51744 | 2.0 | 0.21535 | 0.26356 |
| 16.0 | 1.0 | 0.81491 | 0.68832 | 0.7649 | 0.13331 | 0.78771 | 0.8141 | 0.71968 | 0.81572 | 0.00028 | 0.90887 | 0.52753 | 2.0 | 0.22614 | 0.26891 |
| 17.0 | 1.0 | 0.87532 | 0.77887 | 0.89672 | 0.1234 | 0.85879 | 0.87425 | 0.61787 | 0.87639 | 0.00033 | 0.94242 | 0.64217 | 2.0 | 0.21728 | 0.27381 |
| 18.0 | 1.0 | 0.88344 | 0.79201 | 0.89297 | 0.12084 | 0.86827 | 0.88287 | 0.59939 | 0.88402 | 0.00034 | 0.94728 | 0.65911 | 2.0 | 0.21179 | 0.27455 |
| 19.0 | 1.0 | 0.89206 | 0.80608 | 0.89545 | 0.11703 | 0.87826 | 0.89167 | 0.57505 | 0.89245 | 0.00035 | 0.95199 | 0.67846 | 2.0 | 0.20014 | 0.28025 |
| 20.0 | 1.0 | 0.89999 | 0.81912 | 0.89484 | 0.11151 | 0.88744 | 0.89977 | 0.54907 | 0.90022 | 0.00035 | 0.95626 | 0.69657 | 2.0 | 0.20081 | 0.28109 |

Standard deviation of Adjusted Rand versus number of clusters
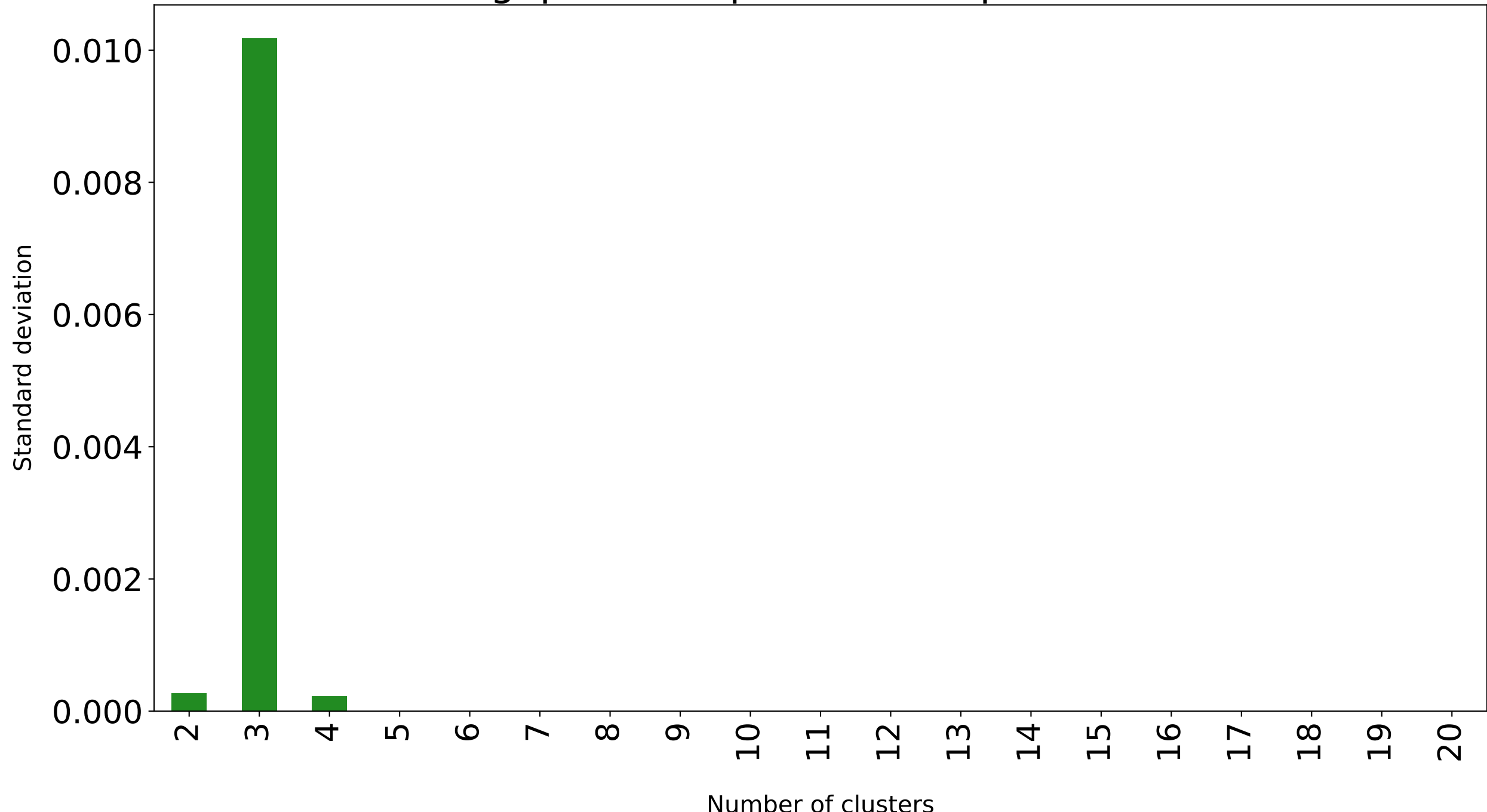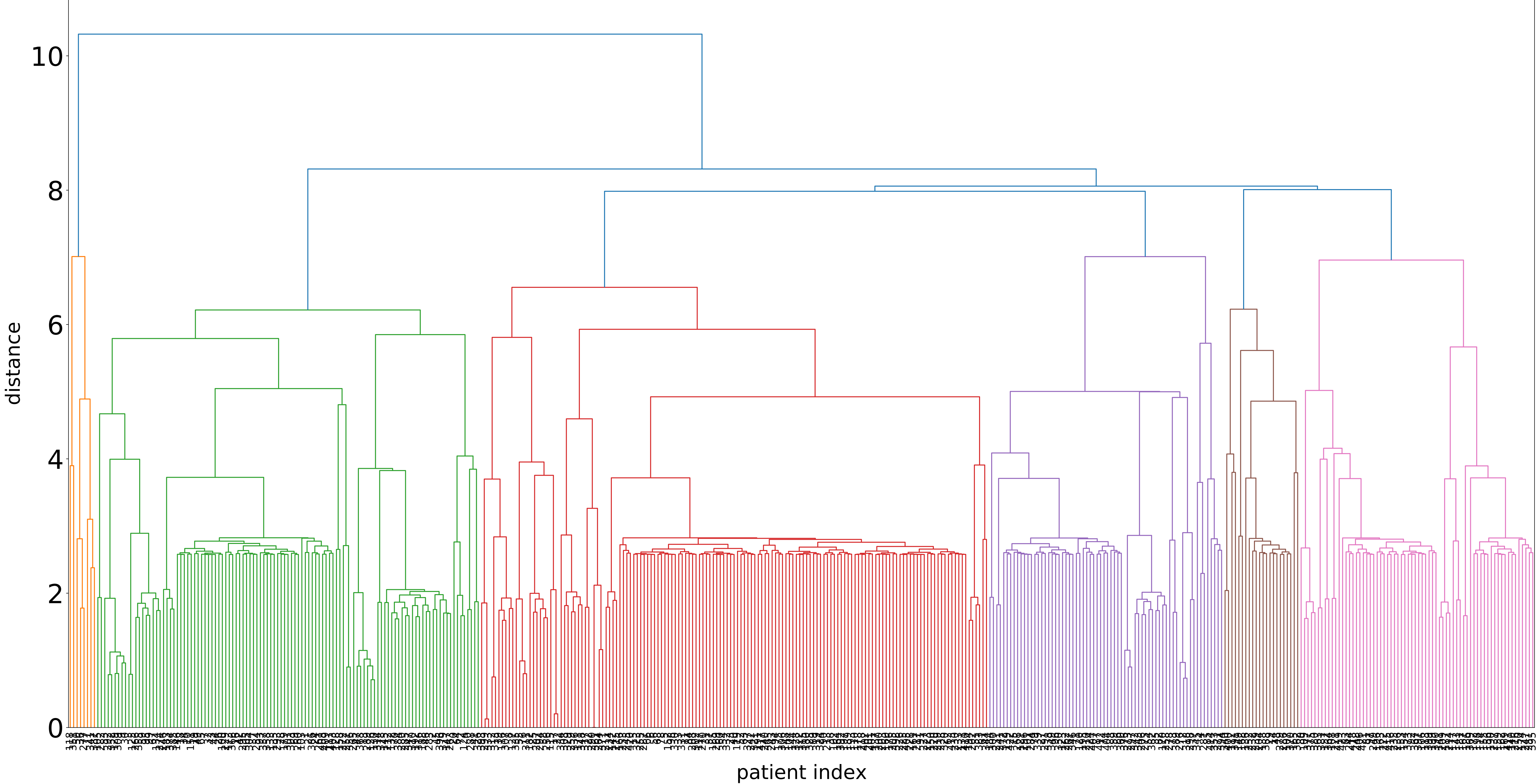gap: 0.70, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 0.80, Tp: 0.25, complete link

distance

patient index

Cophenetic Correlation Coefficient: 0.6876095268562388

## Average values of five clustering indices
## gap: 0.80, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1.0 | 0.84727 | 0.74252 | 0.42958 | 0.10568 | 0.29839 | 0.83999 | 0.52144 | 0.85475 | 0.00014 | 0.63785 | 0.62017 | 0.07407 | 0.13067 | 0.21284 |
| 3.0 | 0.99932 | 0.68502 | 0.53775 | 0.36013 | 0.22511 | 0.34778 | 0.68225 | 0.9997 | 0.68784 | 6e-05 | 0.52647 | 0.39221 | 0.07407 | 0.1623 | 0.21335 |
| 4.0 | 1.00004 | 0.61977 | 0.45145 | 0.24344 | 0.25578 | 0.31668 | 0.61117 | 1.15929 | 0.62858 | 5e-05 | 0.49095 | 0.30214 | 0.2963 | 0.21088 | 0.22118 |
| 5.0 | 1.00001 | 0.66119 | 0.50526 | 0.49729 | 0.23536 | 0.50156 | 0.65911 | 1.08575 | 0.66328 | 9e-05 | 0.64869 | 0.35237 | 0.2963 | 0.19068 | 0.22282 |
| 6.0 | 1.0 | 0.68532 | 0.53137 | 0.51801 | 0.21351 | 0.56071 | 0.68205 | 1.00793 | 0.68861 | 0.00011 | 0.69897 | 0.37715 | 0.2963 | 0.19613 | 0.23663 |
| 7.0 | 1.0 | 0.69375 | 0.53463 | 0.49901 | 0.20468 | 0.58548 | 0.68707 | 0.9754 | 0.70054 | 0.00012 | 0.71783 | 0.37704 | 0.31746 | 0.20925 | 0.25314 |
| 8.0 | 1.0 | 0.69256 | 0.52649 | 0.47801 | 0.20059 | 0.59286 | 0.68201 | 0.96148 | 0.70334 | 0.00012 | 0.72355 | 0.36675 | 0.37037 | 0.24169 | 0.25329 |
| 9.0 | 1.0 | 0.69485 | 0.5267 | 0.47935 | 0.17859 | 0.60429 | 0.68255 | 0.89271 | 0.70745 | 0.00013 | 0.73704 | 0.36673 | 0.37037 | 0.25587 | 0.25367 |
| 10.0 | 1.0 | 0.69824 | 0.53262 | 0.50697 | 0.17788 | 0.6178 | 0.68842 | 0.88329 | 0.70825 | 0.00014 | 0.76154 | 0.37186 | 0.37037 | 0.24084 | 0.27042 |
| 11.0 | 1.0 | 0.79527 | 0.66514 | 0.72017 | 0.12831 | 0.75208 | 0.79376 | 0.68291 | 0.79678 | 0.00021 | 0.8662 | 0.5086 | 0.37037 | 0.23662 | 0.27064 |
| 12.0 | 1.0 | 0.79275 | 0.65862 | 0.69205 | 0.12691 | 0.75103 | 0.79005 | 0.66832 | 0.79548 | 0.00021 | 0.86769 | 0.49907 | 2.0 | 0.23598 | 0.27744 |
| 13.0 | 1.0 | 0.80427 | 0.67571 | 0.76516 | 0.13304 | 0.76964 | 0.8034 | 0.69646 | 0.80515 | 0.00024 | 0.88847 | 0.51667 | 2.0 | 0.22997 | 0.28979 |
| 14.0 | 1.0 | 0.81625 | 0.69194 | 0.76346 | 0.12592 | 0.78515 | 0.81521 | 0.66281 | 0.81729 | 0.00025 | 0.89838 | 0.53496 | 2.0 | 0.23381 | 0.28051 |
| 15.0 | 1.0 | 0.85299 | 0.74577 | 0.83744 | 0.11838 | 0.83067 | 0.85227 | 0.5863 | 0.85371 | 0.00029 | 0.92495 | 0.60025 | 2.0 | 0.2203 | 0.28188 |
| 16.0 | 1.0 | 0.86017 | 0.75651 | 0.82733 | 0.11601 | 0.83944 | 0.85954 | 0.57087 | 0.86081 | 0.00029 | 0.92995 | 0.61354 | 2.0 | 0.21647 | 0.28262 |
| 17.0 | 1.0 | 0.89453 | 0.81096 | 0.89875 | 0.10331 | 0.87996 | 0.89395 | 0.51307 | 0.89511 | 0.00033 | 0.94971 | 0.68771 | 2.0 | 0.21605 | 0.2891 |
| 18.0 | 1.0 | 0.90051 | 0.82087 | 0.89961 | 0.10071 | 0.88708 | 0.9001 | 0.49927 | 0.90092 | 0.00033 | 0.95357 | 0.70159 | 2.0 | 0.22434 | 0.2974 |
| 19.0 | 1.0 | 0.90322 | 0.82514 | 0.89138 | 0.10005 | 0.8904 | 0.90292 | 0.4932 | 0.90353 | 0.00034 | 0.95559 | 0.70705 | 2.0 | 0.22755 | 0.30875 |
| 20.0 | 1.0 | 0.90277 | 0.8242 | 0.87971 | 0.10063 | 0.89009 | 0.90246 | 0.49398 | 0.90309 | 0.00034 | 0.95595 | 0.70524 | 2.0 | 0.2254 | 0.3195 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 0.80, Tp: 0.25, complete link

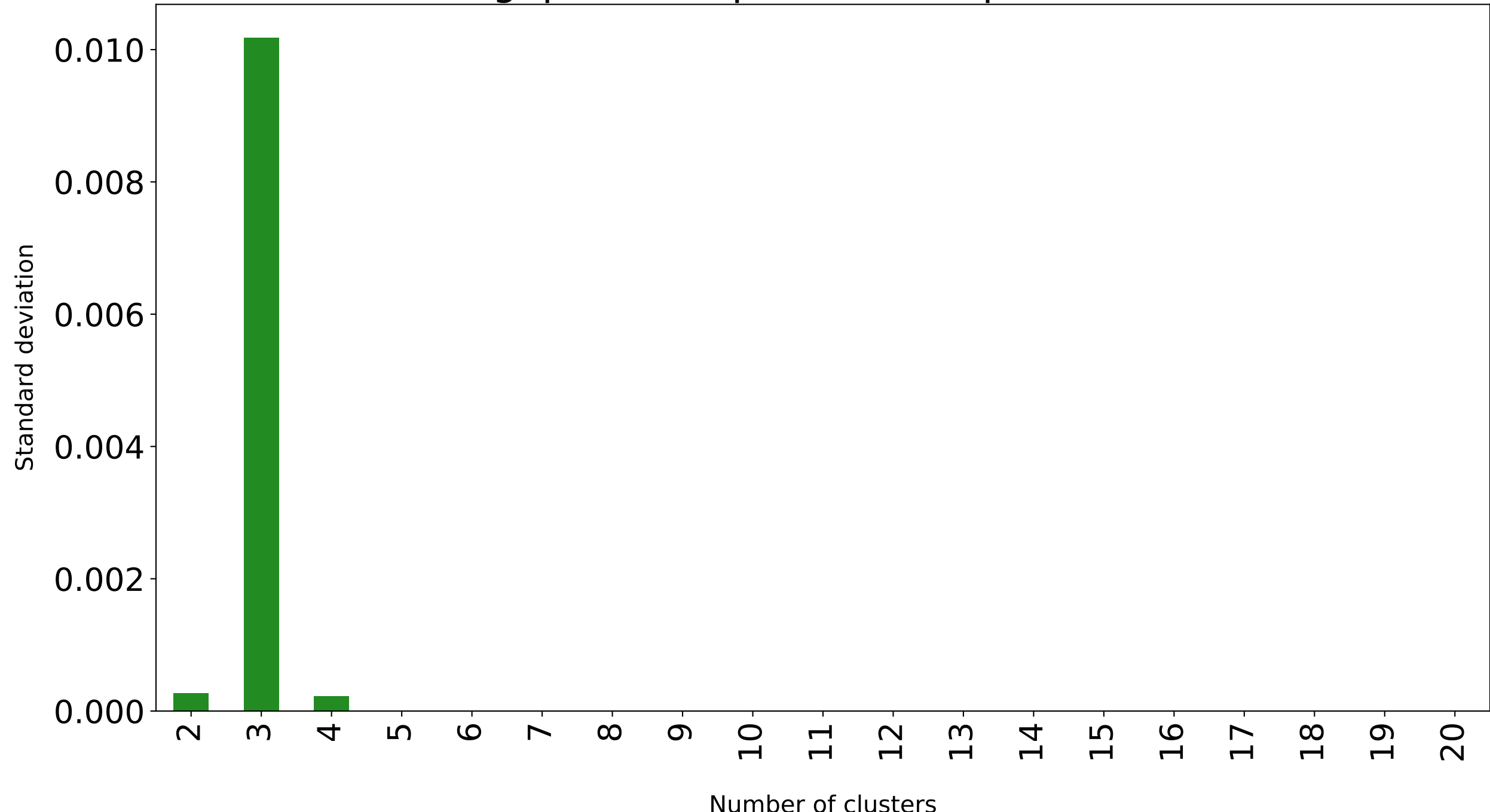Hierarchical Clustering Dendrogram - gap: 0.90, Tp: 0.25, complete link

patient index

distance

Cophenetic Correlation Coefficient: 0.7298357740390699

## Average values of five clustering indices
## gap: 0.90, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 1.0 | 0.91132 | 0.84363 | 0.45263 | 0.05893 | 0.53766 | 0.90366 | 0.27703 | 0.91926 | 0.00051 | 0.77219 | 0.76804 | 0.0 | 0.34189 | 0.22096 |
| 3.0 | 0.99997 | 0.72445 | 0.58328 | 0.34708 | 0.18747 | 0.35627 | 0.72046 | 0.78953 | 0.7285 | 6e-05 | 0.54033 | 0.44002 | 0.00729 | 0.25249 | 0.22795 |
| 4.0 | 1.00002 | 0.6418 | 0.48374 | 0.43147 | 0.24108 | 0.41602 | 0.63926 | 1.03576 | 0.64437 | 7e-05 | 0.57384 | 0.33461 | 0.04938 | 0.22295 | 0.22944 |
| 5.0 | 1.00001 | 0.64131 | 0.4804 | 0.42056 | 0.23178 | 0.45667 | 0.63842 | 1.03832 | 0.64423 | 8e-05 | 0.61198 | 0.32816 | 0.40404 | 0.21964 | 0.23015 |
| 6.0 | 1.0 | 0.72383 | 0.5778 | 0.66921 | 0.1804 | 0.62582 | 0.72039 | 0.89998 | 0.72734 | 0.00013 | 0.74802 | 0.42462 | 0.40404 | 0.22727 | 0.26205 |
| 7.0 | 1.0 | 0.75341 | 0.61639 | 0.66096 | 0.16323 | 0.67374 | 0.75137 | 0.8397 | 0.75548 | 0.00015 | 0.78777 | 0.46426 | 2.0 | 0.22751 | 0.26209 |
| 8.0 | 1.0 | 0.77505 | 0.64213 | 0.66646 | 0.15022 | 0.70882 | 0.77273 | 0.77543 | 0.77738 | 0.00016 | 0.81521 | 0.48935 | 2.0 | 0.23255 | 0.26402 |
| 9.0 | 1.0 | 0.79685 | 0.67171 | 0.69258 | 0.12316 | 0.742 | 0.79452 | 0.67841 | 0.7992 | 0.00018 | 0.84128 | 0.52324 | 2.0 | 0.24831 | 0.28037 |
| 10.0 | 1.0 | 0.8062 | 0.68166 | 0.74336 | 0.11995 | 0.76136 | 0.80506 | 0.65116 | 0.80734 | 0.0002 | 0.86444 | 0.52862 | 2.0 | 0.22923 | 0.28852 |
| 11.0 | 1.0 | 0.80876 | 0.68275 | 0.72078 | 0.11611 | 0.76681 | 0.80684 | 0.6224 | 0.81069 | 0.0002 | 0.87 | 0.52818 | 2.0 | 0.22703 | 0.28906 |
| 12.0 | 1.0 | 0.79869 | 0.66837 | 0.76435 | 0.13027 | 0.75989 | 0.79788 | 0.67773 | 0.7995 | 0.00022 | 0.87765 | 0.50866 | 2.0 | 0.21514 | 0.2979 |
| 13.0 | 1.0 | 0.83323 | 0.71636 | 0.8282 | 0.11957 | 0.80423 | 0.83215 | 0.60979 | 0.83432 | 0.00025 | 0.90506 | 0.56433 | 2.0 | 0.21448 | 0.30193 |
| 14.0 | 1.0 | 0.85235 | 0.74564 | 0.82828 | 0.11216 | 0.82788 | 0.85157 | 0.57205 | 0.85313 | 0.00027 | 0.91906 | 0.60156 | 2.0 | 0.22083 | 0.28928 |
| 15.0 | 1.0 | 0.86467 | 0.76335 | 0.82254 | 0.10391 | 0.84316 | 0.86378 | 0.53415 | 0.86557 | 0.00028 | 0.92783 | 0.62294 | 2.0 | 0.22936 | 0.29012 |
| 16.0 | 1.0 | 0.88894 | 0.80199 | 0.87392 | 0.09527 | 0.87244 | 0.88842 | 0.49164 | 0.88946 | 0.00031 | 0.94388 | 0.67517 | 2.0 | 0.22905 | 0.29368 |
| 17.0 | 1.0 | 0.89515 | 0.81161 | 0.86706 | 0.09328 | 0.87991 | 0.89466 | 0.48095 | 0.89565 | 0.00031 | 0.94785 | 0.68774 | 2.0 | 0.23673 | 0.29655 |
| 18.0 | 1.0 | 0.89929 | 0.81837 | 0.86668 | 0.09036 | 0.88498 | 0.89879 | 0.46736 | 0.89978 | 0.00032 | 0.95083 | 0.69738 | 2.0 | 0.2421 | 0.29932 |
| 19.0 | 1.0 | 0.89833 | 0.81618 | 0.85693 | 0.09015 | 0.88412 | 0.89765 | 0.46538 | 0.89902 | 0.00032 | 0.95083 | 0.69356 | 2.0 | 0.24425 | 0.33299 |
| 20.0 | 1.0 | 0.89539 | 0.81124 | 0.85151 | 0.09253 | 0.88119 | 0.89467 | 0.4714 | 0.89611 | 0.00033 | 0.95067 | 0.68642 | 2.0 | 0.23209 | 0.33482 |

**Standard deviation of Adjusted Rand versus number of clusters**
gap: 0.90, Tp: 0.25, complete link

Hierarchical Clustering Dendrogram - gap: 1.00, Tp: 0.25, complete link

Cophenetic Correlation Coefficient: 0.6886325360317476
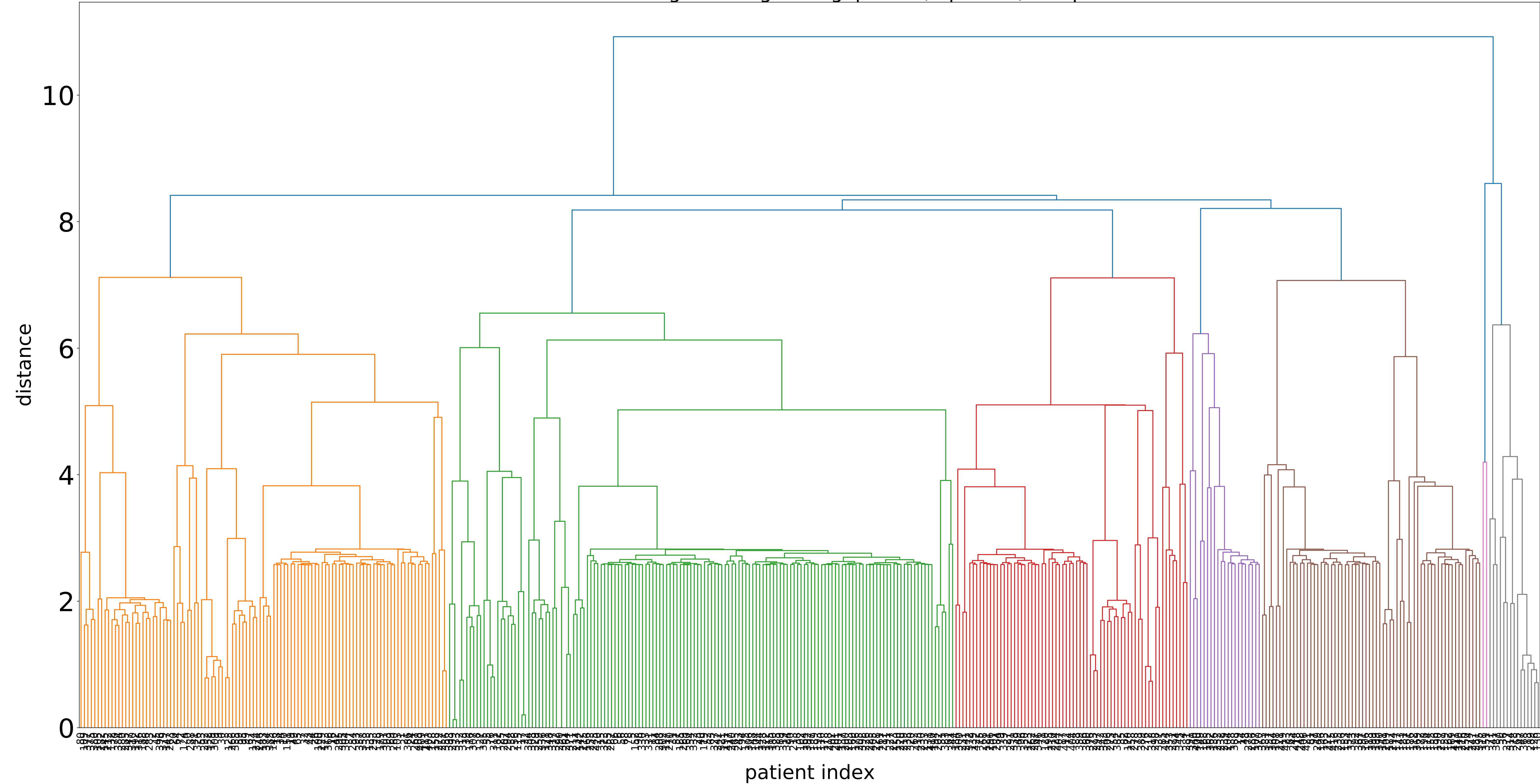
## Average values of five clustering indices
## gap: 1.00, Tp: 0.25, complete link

| k | AR | FM | J | AW | VD | H | F | VI | K | Phi | RT | SS | CVNN | S | Dunn |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|------|
| 2.0 | 1.0 | 0.92797 | 0.87113 | 0.6342 | 0.05099 | 0.51294 | 0.92394 | 0.27593 | 0.93211 | 0.00034 | 0.80376 | 0.79633 | 0.13072 | 0.27114 | 0.20692 |
| 3.0 | 0.99999 | 0.77297 | 0.61368 | 0.12777 | 0.15302 | 0.23713 | 0.7513 | 0.66836 | 0.79563 | 9e-05 | 0.48332 | 0.46126 | 2.0 | 0.30032 | 0.21155 |
| 4.0 | 0.99999 | 0.64169 | 0.47321 | 0.22641 | 0.23474 | 0.31533 | 0.63067 | 1.0133 | 0.65303 | 5e-05 | 0.48375 | 0.32223 | 2.0 | 0.24111 | 0.21336 |
| 5.0 | 1.00001 | 0.6653 | 0.50487 | 0.44109 | 0.21667 | 0.48966 | 0.66124 | 0.99318 | 0.66942 | 9e-05 | 0.62805 | 0.3491 | 2.0 | 0.2272 | 0.21689 |
| 6.0 | 1.00001 | 0.69322 | 0.52926 | 0.46047 | 0.19338 | 0.5622 | 0.68461 | 0.91783 | 0.702 | 0.00011 | 0.68039 | 0.3687 | 2.0 | 0.22974 | 0.21754 |
| 7.0 | 1.0 | 0.7899 | 0.66643 | 0.73236 | 0.14294 | 0.72284 | 0.78844 | 0.7466 | 0.79137 | 0.00016 | 0.81868 | 0.52061 | 2.0 | 0.2384 | 0.2501 |
| 8.0 | 1.0 | 0.76785 | 0.63384 | 0.72622 | 0.16166 | 0.7029 | 0.76646 | 0.81991 | 0.76925 | 0.00016 | 0.81752 | 0.47877 | 2.0 | 0.21442 | 0.25037 |
| 9.0 | 1.0 | 0.77686 | 0.64483 | 0.72462 | 0.15665 | 0.71827 | 0.7758 | 0.78008 | 0.77793 | 0.00017 | 0.83183 | 0.48908 | 2.0 | 0.21977 | 0.25182 |
| 10.0 | 1.0 | 0.79489 | 0.6685 | 0.74387 | 0.12674 | 0.74542 | 0.79384 | 0.68789 | 0.79596 | 0.00019 | 0.85353 | 0.51509 | 2.0 | 0.23486 | 0.27165 |
| 11.0 | 1.0 | 0.79424 | 0.66194 | 0.79444 | 0.13208 | 0.75225 | 0.79239 | 0.69808 | 0.79612 | 0.00021 | 0.86825 | 0.50233 | 2.0 | 0.22337 | 0.27955 |
| 12.0 | 1.0 | 0.80485 | 0.67708 | 0.77314 | 0.12821 | 0.76686 | 0.80382 | 0.67724 | 0.80588 | 0.00022 | 0.88005 | 0.51903 | 2.0 | 0.21895 | 0.28584 |
| 13.0 | 1.0 | 0.81185 | 0.68527 | 0.75187 | 0.12264 | 0.77699 | 0.81057 | 0.64801 | 0.81314 | 0.00023 | 0.88809 | 0.52666 | 2.0 | 0.21893 | 0.28603 |
| 14.0 | 1.0 | 0.8198 | 0.6957 | 0.75621 | 0.1207 | 0.78831 | 0.8185 | 0.63972 | 0.8211 | 0.00025 | 0.89724 | 0.5377 | 2.0 | 0.21882 | 0.29049 |
| 15.0 | 1.0 | 0.86516 | 0.76438 | 0.83958 | 0.10965 | 0.8436 | 0.86457 | 0.56075 | 0.86576 | 0.00028 | 0.928 | 0.62382 | 2.0 | 0.21906 | 0.2963 |
| 16.0 | 1.0 | 0.87511 | 0.77949 | 0.83842 | 0.10154 | 0.85574 | 0.87459 | 0.52697 | 0.87563 | 0.00029 | 0.93482 | 0.64316 | 2.0 | 0.22741 | 0.30065 |
| 17.0 | 1.0 | 0.87535 | 0.77914 | 0.82822 | 0.10226 | 0.85639 | 0.87462 | 0.52888 | 0.87608 | 0.00029 | 0.93573 | 0.642 | 2.0 | 0.23625 | 0.30105 |
| 18.0 | 1.0 | 0.87287 | 0.77447 | 0.81575 | 0.1047 | 0.8539 | 0.87186 | 0.53746 | 0.87389 | 0.0003 | 0.93522 | 0.63513 | 2.0 | 0.23444 | 0.30162 |
| 19.0 | 1.0 | 0.89243 | 0.80705 | 0.86498 | 0.09841 | 0.87721 | 0.89203 | 0.49988 | 0.89283 | 0.00032 | 0.94782 | 0.68068 | 2.0 | 0.23683 | 0.30348 |
| 20.0 | 1.0 | 0.89276 | 0.80732 | 0.85925 | 0.09467 | 0.87797 | 0.89223 | 0.48233 | 0.89329 | 0.00032 | 0.94897 | 0.68094 | 2.0 | 0.2441 | 0.34595 |

Standard deviation of Adjusted Rand versus number of clusters
gap: 1.00, Tp: 0.25, complete link