预处理

缺失值填充

MVA VARIABLES=RID AGE PIB ABETA TAU PTAU CDRSB ADAS11 ADAS13 MMSE LDELTOTAL DIGITSCOR TRABSCOR DX\_bl

/MAXCAT=25

/CATEGORICAL=DX\_bl

/EM(TOLERANCE=0.001 CONVERGENCE=0.0001 ITERATIONS=25).

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| **单变量统计** | | | | | | | |
|  | 个案数 | 平均值 | 标准 偏差 | 缺失 | | 极值数a | |
| 计数 | 百分比 | 低 | 高 |
| RID | 2425 | 3719.63 | 2418.341 | 0 | .0 | 0 | 0 |
| AGE | 2425 | 74.628 | 6.7623 | 0 | .0 | 40 | 0 |
| PIB | 101 | 1.843119 | .4250742 | 2324 | 95.8 | 0 | 0 |
| ABETA | 601 | 765.934 | 351.5025 | 1824 | 75.2 | 0 | 14 |
| TAU | 601 | 299.341 | 130.4433 | 1824 | 75.2 | 0 | 15 |
| PTAU | 601 | 29.3810 | 14.57990 | 1824 | 75.2 | 0 | 12 |
| CDRSB | 2400 | 2.096 | 2.4636 | 25 | 1.0 | 0 | 66 |
| ADAS11 | 2406 | 11.9610 | 7.98593 | 19 | .8 | 0 | 78 |
| ADAS13 | 2378 | 18.6120 | 11.02912 | 47 | 1.9 | 0 | 28 |
| MMSE | 2408 | 26.33 | 3.810 | 17 | .7 | 60 | 0 |
| LDELTOTAL | 1692 | 7.07 | 6.322 | 733 | 30.2 | 0 | 0 |
| DIGITSCOR | 2206 | 37.88 | 14.456 | 219 | 9.0 | 29 | 6 |
| TRABSCOR | 2333 | 129.80 | 82.528 | 92 | 3.8 | 0 | 0 |
| DX\_bl | 2425 |  |  | 0 | .0 |  |  |
| a. 超出范围 (Q1 - 1.5\*IQR, Q3 + 1.5\*IQR) 的个案数。 | | | | | | | |

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| **估算平均值摘要** | | | | | | | | | | | | | |
|  | RID | AGE | PIB | ABETA | TAU | PTAU | CDRSB | ADAS11 | ADAS13 | MMSE | LDELTOTAL | DIGITSCOR | TRABSCOR |
| 所有值 | 3719.63 | 74.628 | 1.843119 | 765.934 | 299.341 | 29.3810 | 2.096 | 11.9610 | 18.6120 | 26.33 | 7.07 | 37.88 | 129.80 |
| EM | 3719.63 | 74.628 | 1.844549 | 773.933 | 297.459 | 29.1158 | 2.093 | 11.9644 | 18.7466 | 26.33 | 6.95 | 37.92 | 133.70 |

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| **估算标准差摘要** | | | | | | | | | | | | | |
|  | RID | AGE | PIB | ABETA | TAU | PTAU | CDRSB | ADAS11 | ADAS13 | MMSE | LDELTOTAL | DIGITSCOR | TRABSCOR |
| 所有值 | 2418.341 | 6.7623 | .4250742 | 351.5025 | 130.4433 | 14.57990 | 2.4636 | 7.98593 | 11.02912 | 3.810 | 6.322 | 14.456 | 82.528 |
| EM | 2418.341 | 6.7623 | .4214619 | 352.0945 | 130.6967 | 14.59857 | 2.4634 | 7.98691 | 11.24902 | 3.811 | 6.229 | 14.593 | 85.790 |

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| **EM 平均值a** | | | | | | | | | | | | |
| RID | AGE | PIB | ABETA | TAU | PTAU | CDRSB | ADAS11 | ADAS13 | MMSE | LDELTOTAL | DIGITSCOR | TRABSCOR |
| 3719.63 | 74.628 | 1.844549 | 773.933 | 297.459 | 29.1158 | 2.093 | 11.9644 | 18.7466 | 26.33 | 6.95 | 37.92 | 133.70 |
| a. 利特尔 MCAR 检验：卡方 = 954.208，自由度 = 333，重要性 = .000 | | | | | | | | | | | | |

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| **EM 协方差a** | | | | | | | | | | | | | |
|  | RID | AGE | PIB | ABETA | TAU | PTAU | CDRSB | ADAS11 | ADAS13 | MMSE | LDELTOTAL | DIGITSCOR | TRABSCOR |
| RID | 5848374.065 |  |  |  |  |  |  |  |  |  |  |  |  |
| AGE | 398.397 | 45.7290 |  |  |  |  |  |  |  |  |  |  |  |
| PIB | 49.612 | -.3919 | .1776301 |  |  |  |  |  |  |  |  |  |  |
| ABETA | -52777.732 | 153.4750 | -60.4543448 | 123970.5527 |  |  |  |  |  |  |  |  |  |
| TAU | 37361.491 | 7.7966 | 21.1111996 | -12938.6327 | 17081.6275 |  |  |  |  |  |  |  |  |
| PTAU | 3986.080 | -.9622 | 2.4792291 | -1663.2767 | 1880.5162 | 213.11830 |  |  |  |  |  |  |  |
| CDRSB | 567.640 | -.4223 | .2549872 | -331.7383 | 94.0593 | 9.50121 | 6.0682 |  |  |  |  |  |  |
| ADAS11 | 1596.421 | -2.2708 | 1.2408853 | -1177.5229 | 326.4797 | 33.56701 | 15.5043 | 63.79068 |  |  |  |  |  |
| ADAS13 | 2859.164 | -3.5458 | 1.9390436 | -1777.6519 | 507.6701 | 52.77964 | 22.2276 | 88.07737 | 126.54046 |  |  |  |  |
| MMSE | -520.876 | 1.1401 | -.4399469 | 544.3610 | -138.7443 | -14.23253 | -7.3259 | -25.12777 | -35.57541 | 14.521 |  |  |  |
| LDELTOTAL | -1497.214 | 2.1013 | -1.0681311 | 872.4010 | -288.4553 | -32.02503 | -9.6719 | -32.96655 | -50.61723 | 14.799 | 38.800 |  |  |
| DIGITSCOR | -3308.862 | -2.3667 | -1.5017527 | 1771.9165 | -542.5670 | -56.33580 | -21.0755 | -74.15461 | -110.54244 | 33.961 | 47.224 | 212.955 |  |
| TRABSCOR | 21638.431 | -.0706 | 5.5645408 | -8936.9454 | 2786.4441 | 277.45688 | 121.4222 | 412.53239 | 603.57558 | -197.308 | -249.100 | -898.122 | 7359.962 |
| a. 利特尔 MCAR 检验：卡方 = 954.208，自由度 = 333，重要性 = .000 | | | | | | | | | | | | | |

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| **EM 相关性a** | | | | | | | | | | | | | |
|  | RID | AGE | PIB | ABETA | TAU | PTAU | CDRSB | ADAS11 | ADAS13 | MMSE | LDELTOTAL | DIGITSCOR | TRABSCOR |
| RID | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| AGE | .024 | 1 |  |  |  |  |  |  |  |  |  |  |  |
| PIB | .049 | -.138 | 1 |  |  |  |  |  |  |  |  |  |  |
| ABETA | -.062 | .064 | -.407 | 1 |  |  |  |  |  |  |  |  |  |
| TAU | .118 | .009 | .383 | -.281 | 1 |  |  |  |  |  |  |  |  |
| PTAU | .113 | -.010 | .403 | -.324 | .986 | 1 |  |  |  |  |  |  |  |
| CDRSB | .095 | -.025 | .246 | -.382 | .292 | .264 | 1 |  |  |  |  |  |  |
| ADAS11 | .083 | -.042 | .369 | -.419 | .313 | .288 | .788 | 1 |  |  |  |  |  |
| ADAS13 | .105 | -.047 | .409 | -.449 | .345 | .321 | .802 | .980 | 1 |  |  |  |  |
| MMSE | -.057 | .044 | -.274 | .406 | -.279 | -.256 | -.780 | -.826 | -.830 | 1 |  |  |  |
| LDELTOTAL | -.099 | .050 | -.407 | .398 | -.354 | -.352 | -.630 | -.663 | -.722 | .623 | 1 |  |  |
| DIGITSCOR | -.094 | -.024 | -.244 | .345 | -.284 | -.264 | -.586 | -.636 | -.673 | .611 | .520 | 1 |  |
| TRABSCOR | .104 | .000 | .154 | -.296 | .249 | .222 | .575 | .602 | .625 | -.604 | -.466 | -.717 | 1 |
| a. 利特尔 MCAR 检验：卡方 = 954.208，自由度 = 333，重要性 = .000 | | | | | | | | | | | | | |

RMV /RID\_1=SMEAN(RID) /AGE\_1=SMEAN(AGE) /PIB\_1=SMEAN(PIB) /ABETA\_1=SMEAN(ABETA) /TAU\_1=SMEAN(TAU)

/PTAU\_1=SMEAN(PTAU) /ADAS13\_1=SMEAN(ADAS13) /CDRSB\_1=SMEAN(CDRSB) /ADAS11\_1=SMEAN(ADAS11)

/MMSE\_1=SMEAN(MMSE) /LDELTOTAL\_1=SMEAN(LDELTOTAL) /DIGITSCOR\_1=SMEAN(DIGITSCOR)

/TRABSCOR\_1=SMEAN(TRABSCOR).

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| **结果变量** | | | | | | |
|  | 结果变量 | 替换的缺失值数 | 非缺失值的个案编号 | | 有效个案数 | 创建函数 |
| 第一个 | 最后一个 |
| 1 | RID\_1 | 0 | 1 | 2425 | 2425 | SMEAN(RID) |
| 2 | AGE\_1 | 0 | 1 | 2425 | 2425 | SMEAN(AGE) |
| 3 | PIB\_1 | 2324 | 1 | 2425 | 2425 | SMEAN(PIB) |
| 4 | ABETA\_1 | 1824 | 1 | 2425 | 2425 | SMEAN(ABETA) |
| 5 | TAU\_1 | 1824 | 1 | 2425 | 2425 | SMEAN(TAU) |
| 6 | PTAU\_1 | 1824 | 1 | 2425 | 2425 | SMEAN(PTAU) |
| 7 | ADAS13\_1 | 47 | 1 | 2425 | 2425 | SMEAN(ADAS13) |
| 8 | CDRSB\_1 | 25 | 1 | 2425 | 2425 | SMEAN(CDRSB) |
| 9 | ADAS11\_1 | 19 | 1 | 2425 | 2425 | SMEAN(ADAS11) |
| 10 | MMSE\_1 | 17 | 1 | 2425 | 2425 | SMEAN(MMSE) |
| 11 | LDELTOTAL\_1 | 733 | 1 | 2425 | 2425 | SMEAN(LDELTOTAL) |
| 12 | DIGITSCOR\_1 | 219 | 1 | 2425 | 2425 | SMEAN(DIGITSCOR) |
| 13 | TRABSCOR\_1 | 92 | 1 | 2425 | 2425 | SMEAN(TRABSCOR) |

聚类分析

QUICK CLUSTER ZRID\_1 ZAGE\_1 ZPIB\_1 ZABETA\_1 ZTAU\_1 ZPTAU\_1 ZADAS13\_1 ZCDRSB\_1 ZADAS11\_1 ZMMSE\_1

ZLDELTOTAL\_1 ZDIGITSCOR\_1 ZTRABSCOR\_1

/MISSING=LISTWISE

/CRITERIA=CLUSTER(3) MXITER(25) CONVERGE(0)

/METHOD=KMEANS(NOUPDATE)

/PRINT ID(DX\_bl) INITIAL CLUSTER DISTAN.

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| **迭代历史记录a** | | | |
| 迭代 | 聚类中心中的变动 | | |
| 1 | 2 | 3 |
| 1 | 7.146 | 6.764 | 5.951 |
| 2 | .742 | .782 | .044 |
| 3 | .326 | .324 | .018 |
| 4 | .000 | .210 | .010 |
| 5 | .000 | .210 | .010 |
| 6 | .000 | .072 | .004 |
| 7 | .000 | .061 | .003 |
| 8 | .000 | .062 | .003 |
| 9 | .000 | .000 | .000 |
| a. 由于聚类中心中不存在变动或者仅有小幅变动，因此实现了收敛。任何中心的最大绝对坐标变动为 .000。当前迭代为 9。初始中心之间的最小距离为 16.460。 | | | |