## Supplementary Information

Diagnostic data from Elmore et al analysed for MPATH-Dx Class V vs Class I-IVsensitivity and specificity.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Phase 2 diagnosis (No of paired interpretations) | | | | |  | Intraobserver concordance† % (95% CI) | | |
| Phase 1 diagnosis | Class I | Class II | Class III | Class IV | Class V | Total |  |  |  |
| Class I | 1155 | 188 | 119 | 27 | 17 | 1506 | 77 (73 to 80) | |  |
| Class II | 170 | 227 | 182 | 37 | 28 | 644 | 35 (31 to 39) | |  |
| Class III | 91 | 120 | 653 | 169 | 58 | 1091 | 60 (56 to 63) | |  |
| Class IV | 20 | 37 | 147 | 531 | 105 | 840 | 63 (59 to 67) | | *Phase 1 class 5 cases classified as 1-3 by same path in Phase 2* |
| Class V | 14 | 16 | 44 | 105 | 852 | 1031 | 83 (80 to 85) | | 7% |
| Total | 1450 | 588 | 1145 | 869 | 1060 | 5112 | 67‡ (65 to 69) | | *Phase 1 class 5 cases classified as 1-4 by same path in Phase 2* |
|  |  |  |  |  |  |  |  |  | 17% |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | Second pathologist’s interpretation | | |  |  |  | Interobserver concordance % (95% CI) | | |
| First pathologist’s interpretation | Class I | Class II | Class III | Class IV | Class V | Total |  |  |  |
| Class I | 64122 | 15082 | 11223 | 2993 | 1773 | 95193 | 71 (69 to 73) | |  |
| Class II | 15082 | 10366 | 11028 | 3974 | 1903 | 42353 | 25 (22 to 27) | |  |
| Class III | 11223 | 11028 | 31326 | 12675 | 4494 | 70746 | 45 (42 to 47) | |  |
| Class IV | 2993 | 3974 | 12675 | 22334 | 8854 | 50830 | 46 (43 to 49) | | *Path A Class 5 cases classified as 1-3 by Path B* |
| Class V | 1773 | 1903 | 4494 | 8854 | 50926 | 67950 | 77 (75 to 79) | | 12% |
| Total | 95193 | 42353 | 70746 | 50830 | 67950 | 327072 | 55† (53 to 56) | | *Path A Class 5 cases classified as 1-4 by Path B* |
|  |  |  |  |  |  |  |  |  | 25% |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | Study pathologists’ interpretation | | |  |  | Total interpretations (No) | **% Concordance with reference diagnosis (95% CI)** | | |
| Consensus reference diagnosis† | Class I | Class II | Class III | Class IV | Class V |  |  |  |  |
| Class I | 862 | 50 | 19 | 3 | 1 | 935 | 92 (90 to 94) | |  |
| Class II | 843 | 331 | 131 | 26 | 11 | 1342 | 25 (22 to 28) | |  |
| Class III | 695 | 520 | 908 | 113 | 11 | 2247 | 40 (37 to 44) | |  |
| Class IV | 150 | 176 | 717 | 928 | 198 | 2169 | 43 (39 to 46) | | *Consensus 5 cases classified as 1-3 by ind. Path* |
| Class V | 68 | 87 | 161 | 321 | 1646 | **2283** | 72 (69 to 75) | | 14% |
| Total | 2618 | 1164 | 1936 | 1391 | 1867 | 8976 |  |  | *Consensus 5 cases classified as 1-4 by ind. Path* |
|  |  |  |  |  |  |  |  |  | 28% |
|  |  |  |  |  |  |  |  |  |  |