|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Rater | 1 | 2 | 3 | 4 | 5 | 6 | | 1 |  |  |  |  |  |  | | 2 | .78 |  |  |  |  |  | | 3 | .83 | .72 |  |  |  |  | | 4 | .68 | .60 | .83 |  |  |  | | 5 | .97 | .80 | .83 | .67 |  |  | | 6 | .92 | .83 | .83 | .65 | .97 |  | | **Table X: Inter-rater reliability on histologic grading.** For each pair of raters, agreement is Cohen’s kappa. Average inter-rater agreement was 0.81 ± 0.07, expressed as median ± interquartile range. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(-) IHC**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Rater | 1 | 2 | 3 | 4 | 5 | 6 | | 1 |  |  |  |  |  |  | | 2 | .93 |  |  |  |  |  | | 3 | .86 | .83 |  |  |  |  | | 4 | .62 | .59 | .75 |  |  |  | | 5 | .93 | .93 | .89 | .64 |  |  | | 6 | .90 | .86 | .89 | .73 | .89 |  | | **(+) IHC**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Rater | 1 | 2 | 3 | 4 | 5 | 6 | | 1 |  |  |  |  |  |  | | 2 | .83 |  |  |  |  |  | | 3 | .61 | .77 |  |  |  |  | | 4 | .42 | .55 | .67 |  |  |  | | 5 | .69 | .91 | .69 | .48 |  |  | | 6 | .72 | .57 | .40 | .27 | .65 |  | |
| **Table X: Inter-rater reliability for assessing lymphovascular space invasion with (+) and without (-) immunohistochemisty (IHC).** Average inter-rater reliability was 0.65 ± 0.12 with IHC; 0.86 ± 0.08 without IHC | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Rater | | | 1 | .63 | | 2 | .39 | | 3 | .43 | | 4 | .55 | | 5 | .46 | | 6 | .82 | | **Table X: Intra-rater reliability with and without immunohistochemistry.**  Intra-rater reliability between LVSI ratings with and without immunohistochemical staining. Average inter-rater reliability was 0.51 ± 0.09, expressed as median ± interquartile range. |

**Comparison of inter-rater reliability across different staining methodologies**

|  |  |
| --- | --- |
| **Macintosh HD:Users:michaelchary:LVSI:boxplot.tiff** | **Figure X: Summary of inter-rater reliability across staining methodologies.** Box and whisker plot of Cohen’s kappa for histologic grading, assessment of LVSI without IHC (-IHC), assessment of LVSI with IHC (+IHC) and for intra-rater consistency of LVSI assessment with and without IHC. Red line denotes the median. Boxes denote the interquartile range. Whiskers denote the 95th and 5th percentiles. |