Accuracy of Ki-67 Immunostaining in Endoscopic Ultrasound-Guided Fine Needle Aspiration of Pancreatic Neuroendocrine Tumors: An Institute Experience

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Objective

To evaluate the diagnostic accuracy of Ki-67 on cell block preparations of pancreatic neuroendocrine tumor (PanNET).

Materials and Methods

January 2010-October 2017 at The Johns Hopkins Hospital, 36 Ki-67 immunostaining on the cell blocks with corresponding surgical specimen were retrieved. WHO 2010 classification was used. Correlation was calculated by using percent agreement and k statistics.

Results

18 males and 18 females were 12-82 years old (mean 53.1). PanNETs arose in head of pancreas (n=10), neck (n=2), body (n=5), tail (n=15) and body and tail (n=4). Tumor size was 0.8-12.5 cm (mean 3.3). Ki-67 immunostain showed <1 to 40% positivity. Cytological grading was grade 1 (G1) 28 cases, grade 2 (G2) 5 cases, and grade 3 (G3) 2 cases. Histologic grading was G1 21 cases, G2 13 cases and G3 2 cases. 27 cases (75%) were concordant. The percent agreement was 77.14% with k statistics 0.51 [95% CI 0.469-0.597] (p=0.000). Nine cases were discordant: upgrading from G1 in cytology to G2 in histology (7 cases), G1 to G3 (1 case) and downgrading from G3 to G2 (1 case). The cell block preparation and Ki-67 immunostaining were shown as in figure 1-3.

Conclusion

Overall, the Ki-67 immunostaining on cell blocks is accurate. However, assessment of Ki-67 in G1 and G2 PanNETs should be interpreted with caution.

Reference


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