

I.S.Shpon'ka
V.R.Yakovenko

State institution "Dnipropetrovsk medical academy of the Ministry of Health of Ukraine"

Key words: gastrointestinal stromal tumors, immunohistochemistry, proliferative activity, Ki-67, CD117.

Received: 22.02.2014
Accepted: 20.03.2014

UDC 616.33/.34-006.6-076-091.8-097-098

CD117 AND KI-67 EXPRESSION IN GASTROINTESTINAL STROMAL TUMORS OF VARIOUS MORPHOLOGICAL VARIANTS AND LOCALIZATION

The study was performed as a part of research work "Histopathological and immunohistochemical characteristics of gastrointestinal stromal tumors" (state registration number 00112U006965).

ABSTRACT. Background. Gastrointestinal stromal tumors are considered as the most frequently occurring tumors of mesenchymal origin in the gastrointestinal tract. Despite active research work in this field many problems in the diagnosis and prognosis of the disease are still unresolved. **Objective.** To evaluate the interrelations between clinical and morphological characteristics of gastrointestinal stromal tumors, including expression of proliferative activity marker Ki-67, and specific histogenetic marker CD117. **Methods.** 47 samples were divided into 2 groups: CD117-positive and CD117-negative; each group was divided into subgroups using the following criteria: age, histological structure, localization, expression of Ki-67. Statistical processing of the data included nonparametric tests. **Results.** Gastrointestinal stromal tumors are more frequent in patients of age group over 60 years, with localization in the stomach and fusiform type of the structure. Comparative analysis of the subgroups with different expression of CD117 did not reveal any significant differences. **Conclusion.** Data analysis did not reveal any interrelation between the expression of CD117 and clinical or morphological parameters ($p > 0,05$). However, the high rate of Ki-67 expression in stomach neoplasms is less common than in tumors of other localization. Taken together these data evidence the existence of the interrelations between immunohistochemical characteristics and clinical data.

© I.S.Shpon'ka, V.R.Yakovenko, 2014
✉ Val_Y@ua.fm

Citation:

Shpon'ka IS, Yakovenko VR. [CD117 and Ki-67 expression in gastrointestinal stromal tumors of various morphological variants and localization]. *Morphologia*. 2014;8(1):104-8. Ukrainian.

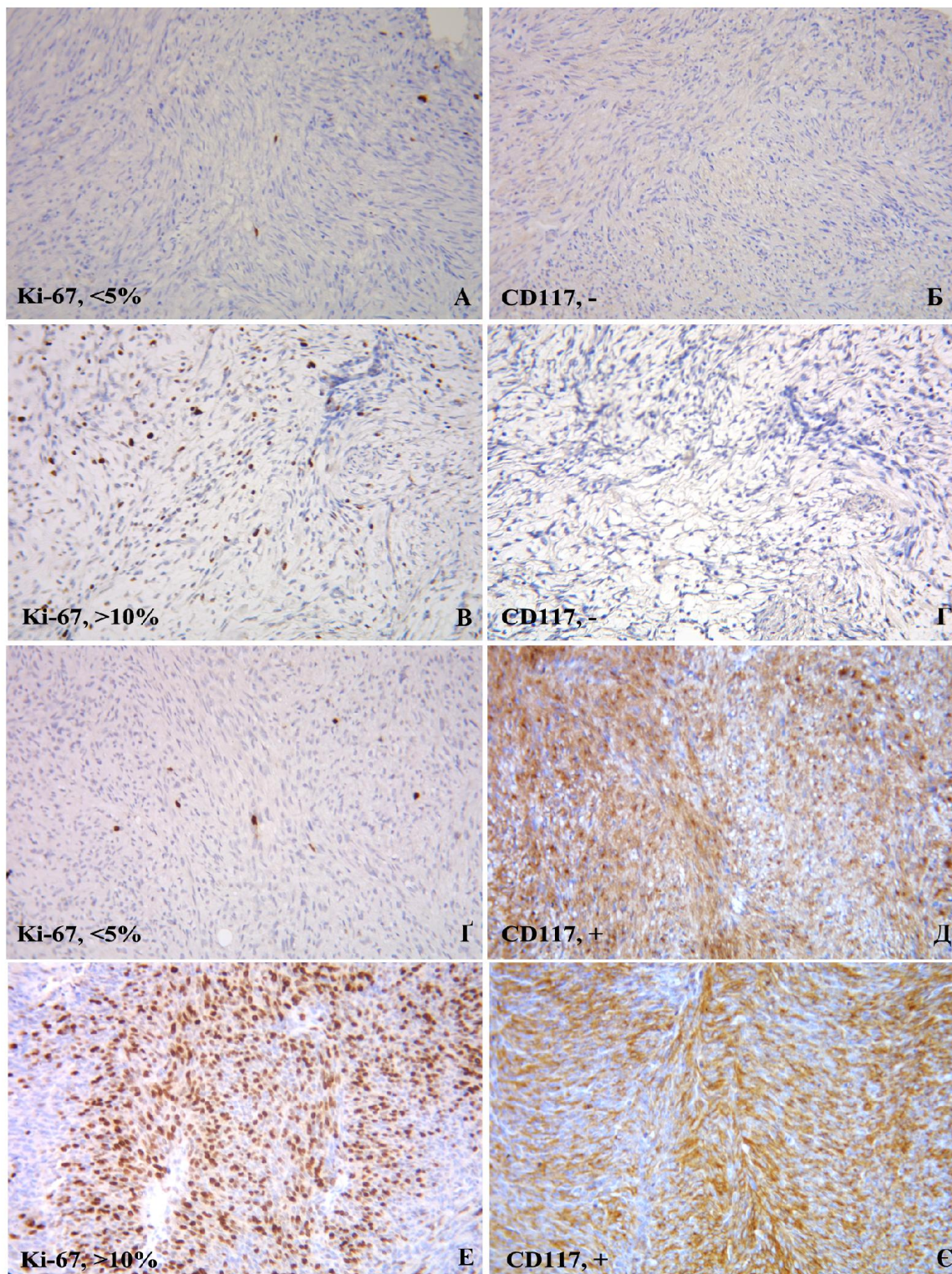


Fig. 1. Gastrointestinal stromal tumors, 4 cases. 1st: A. Reaction of <math><5\%</math> tumor cells nuclei with Ki-67 marker. Б. Negative cytoplasmic and membrane reaction with CD117 marker. 2nd: B. Intranuclear reaction with Ki-67 marker in >10% tumor cells. Г. Negative cytoplasmic and membrane reaction with CD117 marker. 3rd: Г. Reaction of <math><5\%</math> tumor cells nuclei with Ki-67 marker. Д. Cytoplasmic and membrane reaction of tumor cells with CD117 marker. 4th: E. Nuclear reaction with Ki-67 marker of >10% tumor cells. Є. Cytoplasmic and membrane reaction of tumor cells with CD117 marker. Immunohistochemical reaction, additional staining with Mayer's hematoxylin. $\times 400$.

References:

1. Seryakov AP. [Gastrointestinal stromal tumors]. Russian Journal of Gastroenterology, Hepatology and Coloproctology. 2010;(4):49-57. Russian.
2. Steigen SE, Eide TJ. Trends in incidence and survival of mesenchymal neoplasm of the digestive tract within a defined population of northern Norway. *APMIS*. 2006 Mar;114(3):192-200. Cited in: PubMed; PMID: 16643186.
3. Miettinen M1, Lasota J. Gastrointestinal stromal tumors: pathology and prognosis at different sites. *Semin Diagn Pathol*. 2006;23(2):70–83. Cited in: PubMed; PMID: 17193820.
4. Vij M, Agrawal V, Kumar A, Pandey R. Gastrointestinal stromal tumors: A clinicopathological and immunohistochemical study of 121 cases. *Indian J Gastroenterol*. 2010 Nov;29(6):231-6. doi: 10.1007/s12664-010-0079-z. Cited in: PubMed; PMID: 21221881.
5. De Vogelaere K, Aerts M, Haentjens P, De Grève J, Delvaux G. Gastrointestinal stromal tumor of the stomach: progresses in diagnosis and treatment. *Acta Gastroenterol Belg*. 2013 Dec;76(4):403-6. Cited in: PubMed; PMID: 24592543.
6. Fletcher CD, Berman JJ, Corless C, Gorstein F, Lasota J, Longley BJ, Miettinen M, O'Leary TJ, Remotti H, Rubin BP, Shmookler B, Sobin LH, Weiss SW. Diagnosis of gastrointestinal stromal tumors: a consensus approach. *Hum Pathol*. 2002 May;33(5):459-65. Cited in: PubMed; PMID: 12094370
7. Hamilton SR, Aaltonen LA, editors: World Health Organisation classificatoin of tumors: Pathology and genetics of tumors of the digestive system. Lyon: IARC Press; 2000. 314p.
8. Odze RD, Goldblum JR, Crawford JM. Surgical pathology of GI tract, liver, biliary tract, and pancreas. 1st ed. Pennsylvania: Elsevier; 2004. 1067p.
9. Miranda C, Nucifora M, Molinari F, Conca E, Anania MC, Bordoni A, Saletti P, Mazzucchelli L, Pilotti S, Pierotti MA, Tamborini E, Greco A, Frattini M. KRAS and BRAF mutations predict primary resistance to imatinib in gastrointestinal stromal tumors. *Clin Cancer Res*. 2012 Mar 15;18(6):1769-76. doi: 10.1158/1078-0432.CCR-11-2230. Cited in: PubMed; PMID: 22282465.
10. Killian JK, Kim SY, Miettinen M, Smith C, Merino M, Tsokos M, Quezado M, Smith WI Jr, Jahromi MS, Xekouki P, Szarek E, Walker RL, Lasota J, Raffeld M, Klotzle B, Wang Z, Jones L, Zhu Y, Wang Y, Waterfall JJ, O'Sullivan MJ, Bibikova M, Pacak K, Stratakis C, Janeway KA, Schiffman JD, Fan JB, Helman L, Meltzer PS. Succinate dehydrogenase mutation underlies global epigenomic divergence in gastrointestinal stromal tumor. *Cancer Discov*. 2013 Jun;3(6):648-57. doi: 10.1158/2159-8290.CD-13-0092. Cited in: PubMed; PMID: 23550148.
11. Wang C, Jin MS, Zou YB, Gao JN, Li XB, Peng F, Wang HY, Wu ZD, Wang YP, Duan XM. Diagnostic significance of DOG-1 and PKC- θ expression and c-Kit/PDGFR α mutations in gastrointestinal stromal tumours. *Scand J Gastroenterol*. 2013 Sep;48(9):1055-65. doi: 10.3109/00365521.2013.816770. Cited in: PubMed; PMID: 23862765.