CD151及CD163在乳腺癌组织中的表达及其临床意义

《现代肿瘤医学》[ISSN:1672-4992/CN:61-1415/R] 期数: 2019年17期 页码: 3060-3064 栏目: 论著（胸部肿瘤） 出版日期: 2019-07-30

Title: The expression and the clinical significance of CD151 and CD163 in breast cancer

作者: 蔡菁菁[1]; 2; 尹元琴[1]
1.中国医科大学附属第一医院肿瘤研究所二室，辽宁 沈阳 110001;2.辽宁省健康产业集团抚矿总医院，辽宁 抚顺 113008

Author(s): Cai Jingjing[1]; 2; Yin Yuanqin[1]
1.The Second Lab of Cancer Research Institute，the First Hospital of China Medical University，Liaoning Shenyang 110001，China；2.Liaoning Health Industry Group Fukuang General Hospital，Liaoning Fushun 113008，China.

关键词: CD151; CD163; 乳腺癌; 免疫组织化学

Keywords: CD151; CD163; breast cancer; immunohistochemistry

分类号: R737.9

DOI: 10.3969/j.issn.1672-4992.2019.17.018

文献标识码: A

摘要: 目的：研究乳腺癌组织中CD151与CD163的表达水平同时分析两个指标与乳腺癌临床病理参数及预后的关系。方法：使用免疫组化检测100例乳腺癌和30例正常乳腺组织中CD151及CD163（M2巨噬细胞标记物）的表达水平，使用SPSS统计学软件分别对CD151和CD163与乳腺癌的临床病理参数之间的关系和两者的相关性进行统计学分析。结果：CD151表达在乳腺癌细胞的胞膜及胞质，CD163表达在乳腺癌组织的间质，CD151与CD163的阳性表达率分别为70%（70/100）和67%（67/100），与正常乳腺组织相比，差异具有统计学意义（P<0.001）。CD151的阳性表达与乳腺癌组织学分级、TNM分期、淋巴结转移、ER（-）、PR（-）、Her-2（+)显著相关（P<0.05），CD163的阳性表达与肿瘤体积、乳腺癌组织学分级、TNM分期、淋巴结转移、ER（-）、PR（-）、Her-2(+)显著相关（P<0.05），乳腺癌组织中CD151与CD163的表达呈正相关（r=0.701，P<0.001），CD151与CD163双阳性乳腺癌患者具有更高的复发转移率（P<0.05）。结论：乳腺癌组织中CD151与CD163表达明显增高，并与不良的乳腺癌行为密切相关。因此，乳腺癌组织中CD151与CD163表达高低对判断乳腺癌的预后具有重要作用。

Abstract: Objective：To study the expression of CD151 and CD163 in breast cancer tissues and to analyze the relationship between the two indexes and the clinicopathological parameters and prognosis in breast cancer.Methods：The expression of CD151 and CD163 (M2 macrophages marker) in 100 breast cancer and 30 normal breast tissues were detected by immunohistochemical assay.The correlation of CD151 and CD163 and the clinicopathological parameters in breast cancers were statistically analyzed using SPSS statistical software.Results：CD151 was expressed in the membrane and cytoplasm of breast cancer cells rather than interstitial (within tissues) like CD163.The expressions of CD151 and CD163 in breast cancer were respectively 70% (70/100) and 67% (67/100)，showing statistical differences compared to normal breast tissue (P<0.001).The positive expression of CD151 was significantly correlation with poor grading,TNM staging，lymph node metastasis，ER negative，PR negative，and Her-2 positive (P<0.05) in breast cancer.The positive expression of CD163 was significant correlation with large tumor size，poor grading,TNM staging，lymph node metastasis，ER negative，PR negative，and Her-2 positive in breast cancer (P<0.05).The expression of CD151 was positively correlated to CD163 in breast cancer (r=0.701，P<0.001）.The recurrence and metastasis rate in breast cancer patients with CD151 and CD163 positive were significantly higher than the other group (P<0.05).Conclusion：The expression of CD151 and CD163 were significantly up-regulated in breast cancer tissues，which was closely related to the poor behavior of breast cancer.Therefore，the expression of CD151 and CD163 in breast cancer tissues were important in judging the prognosis of breast cancer.

参考文献/REFERENCES

[1] Torre LA, Siegel RL, Ward EM, et al.Global cancer incidence and mortality rates and trends-an update [J] .Cancer Epidemiol Biomarkers Prev, 2016, 25(1): 16-27.

[2] Siegel RL, Miller KD, Jemal A.Cancer statistics, 2018 [J] .CA Cancer J Clin, 2018, 68(1): 7-30.

[3] DeSantis C, Ma J, Bryan L, et al.Breast cancer statistics, 2013 [J] .CA Cancer J Clin, 2014, 64(1): 52-62.

[4] Dent R, Trudeau M, Pritchard KI, et al.Triple-negative breast cancer: Clinical features and patterns of recurrence [J] .Clin Cancer Res, 2007, 13(15 Pt 1): 4429-4434.

[5] Wang C, Kar S, Lai X, et al.Triple negative breast cancer in Asia: An insider's view [J] .Cancer Treat Rev, 2017 (62) : 29-38.

[6] Hemler ME.Targeting of tetraspanin proteins-potential benefits and strategies [J] .Nat Rev Drug Discov, 2008 (7) : 747-758.

[7] Novitskaya V, Romanska H, Dawoud M, et al.Tetraspanin CD151 regulates growth of mammary epithelial cells in three-dimensional extracellular matrix: Implication for mammary ductal carcinoma in situ [J] .Cancer Res, 2010, 70(11): 4698-4708.

[8] Voss MA, Gordon N, Maloney S, et al.Tetraspanin CD151 is a novel prognostic marker in poor outcome endometrial cancer [J] .Br J Cancer, 2011, 104(10): 1611-1618.

[9] Suzuki S, Miyazaki T, Tanaka N, et al.Prognostic significance of CD151 expression in esophageal squamous cell carcinoma with aggressive cell proliferation and invasiveness [J] .Ann Surg Oncol, 2011, 18(3): 888-893.

[10] Zhu GH, Huang C, Qiu ZJ, et al.Expression and prognostic significance of CD151, c-met, and integrin alpha3/alpha6 in pancreatic ductal adenocarcinoma [J] .Dig Dis Sci, 2011, 56(4): 1090-1098.

[11] Kohno M, Hasegawa H, Miyake M, et al.CD151 enhances cell motility and metastasis of cancer cells in the presence of focal adhesion kinase [J] .Int J Cancer, 2002, 97(3): 336-343.

[12] Ke AW, Shi GM, Zhou J, et al.CD151 amplifies signaling by integrin alpha6beta1 to PI3K and induces the epithelial-mesenchymal transition in HCC cells [J] .Gastroenterology, 2011, 140(5): 1629-1641,1615.

[13] Deng X, Li Q, Hoff J, et al.Integrin-associated CD151 drives ErbB2-evoked mammary tumor onset and metastasis [J] .Neoplasia, 2012, 14(8): 678-689.

[14] Yang XH, Flores LM, Li Q, et al.Disruption of laminin-integrin-CD151-focal adhesion kinase axis sensitizes breast cancer cells to ErbB2 antagonists [J] .Cancer Res, 2010, 70(6): 2256-2263.

[15] Romanska HM, Potemski P, Kusinska R, et al.Expression of CD151/Tspan24 and integrin alpha 3 complex in aid of prognostication of Her-2-negative high-grade ductal carcinoma in situ [J] .Int J Clin Exp Pathol, 2015, 8(8): 9471-9478.

[16] Yang XH, Richardson AL, Torres-Arzayus MI, et al.CD151 accelerates breast cancer by regulating alpha 6 integrin function, signaling, and molecular organization [J] .Cancer Res, 2008, 68(9): 3204-3213.

[17] Roselli S, Kahl RG, Copeland BT, et al.Deletion of CD151 reduces mammary tumorigenesis in the MMTV/PyMT mouse model [J] .BMC Cancer, 2014(14): 509.

[18] Pollard JW.Tumour-educated macrophages promote tumour progression and metastasis [J] .Nat Rev Cancer, 2004, 4(1): 71-78.

[19] Lau SK, Chu PG, Weiss LM.CD163: A specific marker of macrophages in paraffin-embedded tissue samples [J] .Am J Clin Pathol, 2004, 122(5): 794-801.

[20] Shabo I, Stal O, Olsson H, et al.Breast cancer expression of CD163, amacrophage scavenger receptor, is related to early distant recurrence and reduced patient survival [J] .Int J Cancer, 2008, 123(4): 780-786.

[21] Shabo I, Olsson H, Sun XF, et al.Expression of the macrophage antigen CD163 in rectal cancer cell sisassociated with early local recurrence and reduced survival time [J] .Int J Cancer, 2009, 125(8): 1826-1831.

[22] Lee CH, Espinosa I, Vrijaldenhoven S, et al.Prognostic significance of macrophage infiltration in leiomyosarcomas [J] .Clin Cancer Res, 2008, 14(5): 1423-1430.

[23] Sharda DR, Yu S, Ray M, et al.Regulation of macrophage arginase expression and tumor growth by the Ron receptor tyrosine kinase [J] .J Immunol, 2011, 187(5): 2181-2192.

[24] Heys SD, Stewart KN, McKenzie EJ, et al.Characterisation of tumour-infiltrating macrophages: Impact on response and survival in patients receiving primary chemotherapy for breast cancer [J] .Breast Cancer Res Treat, 2012, 135(2): 539-548.

[25] Hemler ME.Tetraspanin functions and associated microdomains [J] .Nat Rev Mol Cell Biol, 2005, 6(10): 801-811.

[26] Zijlstra A, Lewis J, Degryse B, et al.The inhibition of tumor cell intravasation and subsequent metastasis via regulation of in vivo tumor cell motility by the tetraspanin CD151 [J] .Cancer Cell, 2008, 13(3): 221-234.

[27] Sadej R, Romanska H, Kavanagh D, et al.Tetraspanin CD151 regulates transforming growth factor beta signaling: Implication in tumor metastasis [J] .Cancer Res, 2010, 70(14): 6059-6070.

[28] Guo W, Pylayeva Y, Pepe A, et al.Beta 4 integrin amplifies ErbB2 signaling to promote mammary tumorigenesis [J] .Cell, 2006, 126(3): 489-502.

[29] Kwon MJ, Park S, Choi JY, et al.Clinical significance of CD151 overexpression in subtypes of invasive

breast cancer［J］.Br J Cancer，2012，106(5)：923-930.
［30］Sadej R，Romanska H，Baldwin G，et al.CD151 regulates tumorigenesis by modulating the communication between tumor cells and endothelium［J］.Mol Cancer Res，2009，7(6)：787-798.
［31］Mantovani A，Sozzani S，Locati M，et al.Macrophage polarization：Tumor-associated macrophages as a paradigm for polarized M2 mononuclear phagocytes［J］.Trends Immunol，2002，23(11)：549-555.
［32］Qian BZ，Pollard JW.Macrophage diversity enhances tumor progression and metastasis［J］.Cell，2010，141(1)：39-51.
［33］Tiainen S，Tumelius R，Rilla K，et al.High numbers of macrophages，especially M2-like (CD163-positive)，correlate with hyaluronan accumulation and poor outcome in breast cancer［J］.Histopathology，2015，66(6)：873-883.

备注/Memo: -

更新日期/Last Update: 2019-07-30