

A new indicator of poor prognosis in node-negative colorectal cancer patients

March 4 2010

Tumor buds are single cells or clusters of up to five cells at the invasive tumor front of colorectal tumors which are important for patient outcome and hypothesized to have stem-cell like properties. A research group in Switzerland has investigated the expression of putative cancer stem cell markers in tumor buds of patients with colorectal cancer identifying expression of ABCG5 as a frequent event associated with poor prognosis.

Tumor budding at the invasive tumor front of colorectal cancer is recognized as an independent prognostic factor significantly related to both lymph node and distant metastasis. Several lines of evidence seem to suggest that tumor buds may, to some extent, represent malignant colorectal cancer stem cells because of their potential for migration and re-differentiation locally and at sites of metastasis. However, phenotypic characterization of cancer stem cells in general is still debated although at least 8 putative stem cell markers have been suggested including CD166, CD44s, EpCAM, ALDH1, CD133, CD24, CD90, and ABCG5. Little is known about the potential of these proteins to act as prognostic biomarkers in patients with colorectal cancer and most of these proteins have never before been explored within tumor buds themselves.

A research article published on February 14, 2010 in the [World Journal of Gastroenterology](#) addressed this question. Considering the apparent stem cell-like properties of tumor buds and association of budding with adverse clinical outcomes, the research team led by Dr. Alessandro Lugli performed immunohistochemical staining of 8 putative cancer stem cell

markers, namely CD166, CD44s, EpCAM, ALDH1, CD133, CD24, CD90, and ABCG5. The expression within tumor buds was evaluated, their frequency of occurrence and their potential prognostic significance in patients with colorectal cancer were determined.

Their findings showed that expression of EpCAM and particularly of ABCG5 within the tumor buds of colorectal cancer are frequent events. Moreover, expression of EpCAM or ABCG5 within tumor buds themselves has the potential to stratify patients with colorectal cancer into prognostic subgroups. This was particularly pronounced for patients with node-negative disease.

The results of this study could have important implications for patients with lymph node-negative colorectal cancer. Stratification of this group of patients could help to identify those likely to have a particularly poor outcome who could perhaps be considered for adjuvant therapy.

The study is characterized technically by an excellent application of immunohistochemistry and provides interesting evidence to aid the understanding of the correlation between cancer stem cell markers at the invasive front of colorectal cancer and prognosis. The findings suggest that EpCAM and ABCG5 in tumor buds may be useful [biomarkers](#) of poor outcome in this subgroup of patients. However, further studies are necessary to address the important issue of whether EpCAM- or ABCG5-positive tumor buds indeed represent migrating [colorectal cancer stem cells](#).

More information: Hostettler I, Zlobec I, Terracciano L, Lugli A. ABCG5-positivity in tumor buds is an indicator of poor prognosis in node-negative colorectal cancer patients. *World J Gastroenterol* 2010; 16(6): 732-739. www.wjgnet.com/1007-9327/16/732.asp

Provided by World Journal of Gastroenterology

Citation: A new indicator of poor prognosis in node-negative colorectal cancer patients (2010, March 4) retrieved 18 April 2024 from <https://medicalxpress.com/news/2010-03-indicator-poor-prognosis-node-negative-colorectal.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.