

Beyond pancreatic carcinoma: The close relationship between survivin levels and prognosis in systemic malignancies

Shailendra Kapoor

Shailendra Kapoor, Formerly University of Illinois at Chicago, Mechanicsville, VA 23111, United States

Author contributions: Kapoor S solely contributed to the manuscript.

Correspondence to: Shailendra Kapoor, MD, Formerly University of Illinois at Chicago, 7487 Sherwood Crossing place #302, Mechanicsville, VA 23111,

United States. shailendrakapoor@yahoo.com

Telephone: +1-804-344-3467 Fax: +1-804-344-3469

Received: April 2, 2012 Revised: April 19, 2012

Accepted: April 24, 2012

Published online: May 10, 2012

Peer reviewers: Luis F Porrata, MD, Assistant Professor, Department of Hematology and Internal Medicine, Mayo Clinic, 200 First Street SW, Rochester, MN 55905, United States; Simone Mocellin, MD, PhD, Department Oncological and Surgical Sciences, University of Padova, via Giustiniani 2, 35128 Padova, Italy

Kapoor S. Beyond pancreatic carcinoma: The close relationship between survivin levels and prognosis in systemic malignancies. *World J Clin Oncol* 2012; 3(5): 80-81 Available from: URL: <http://www.wjgnet.com/2218-4333/full/v3/i5/80.htm> DOI: <http://dx.doi.org/10.5306/wjco.v3.i5.80>

Abstract

I read with great interest the recent article by Liu and Wang in a recent issue of your esteemed journal. The article is highly thought provoking. Interestingly, the past few years have seen a number of studies that have established a close relationship between survivin expression and tumor prognosis in systemic malignancies besides pancreatic carcinomas. For instance, a poor prognosis is seen in patients with bladder carcinomas which exhibit survivin over expression. A higher recurrence rate is seen following radio-chemotherapy in bladder carcinomas which exhibit increased survivin expression. Similarly, up regulation of survivin expression is seen in non-small cell lung cancers. In fact, Yamashita *et al*^[1] have shown that when used in combination with p53AIP1, survivin is a powerful prognostic indicator in non-small cell lung carcinomas. Similarly in breast carcinomas, increased survivin expression is more commonly seen in estrogen receptor negative carcinomas and is associated with a poor overall prognosis.

© 2012 Baishideng. All rights reserved.

Key words: Survivin; Cancer; Malignancy

TO THE EDITOR

I read with great interest the recent article by Liu and Wang^[1] in a recent issue of your esteemed journal. The article is highly thought provoking. Interestingly, the past few years have seen a number of studies that have established a close relationship between survivin expression and tumor prognosis in systemic malignancies besides pancreatic carcinomas.

For instance, a poor prognosis is seen in patients with bladder carcinomas which exhibit survivin over expression. A higher recurrence rate is seen following radio-chemotherapy in bladder carcinomas which exhibit increased survivin expression^[2]. Similarly, up regulation of survivin expression is seen in non-small cell lung cancers^[3]. In fact, Yamashita *et al*^[4] have shown that when used in combination with p53AIP1, survivin is a powerful prognostic indicator in non-small cell lung carcinomas. Similarly in breast carcinomas, increased survivin expression is more commonly seen in estrogen receptor negative carcinomas and is associated with a poor overall prognosis^[5].

Similarly, there is a close co-relation between prognosis in colo-rectal carcinomas and survivin expression

by cancerous colo-rectal cells^[6]. A similar relationship is seen in esophageal squamous cell carcinomas where high survivin mRNA levels are associated with a poor prognosis and low survival rates^[7]. Higher survivin levels are also seen in high risk human papillomavirus infections and are an early stage marker of cervical malignancies^[8]. Interestingly, high grade bladder carcinomas are associated with elevated urine survivin levels^[9]. Not surprisingly the positive predictable value of urine survivin in diagnosing bladder carcinomas is close to 92%.

The above examples illustrate the clinical usefulness of survivin as a significant prognostic indicator in malignancies ranging from esophageal carcinomas to cervical carcinomas. Further large scale studies are needed to further investigate if survivin levels may predict tumor prognosis in other systemic malignancies besides those mentioned above.

REFERENCES

- 1 **Liu A**, Hu YS, Wang ZH, Tang LL, Ke PY, Lin SZ. [Role of nuclear factor-kappaB on emodin-induced sensitization of pancreatic cancer to gemcitabine]. *YaoXue XueBao* 2011; **46**: 146-152
- 2 **Weiss C**, von Römer F, Capalbo G, Ott OJ, Wittlinger M, Krause SF, Sauer R, Rödel C, Rödel F. Survivin expression as a predictive marker for local control in patients with high-risk T1 bladder cancer treated with transurethral resection and radiochemotherapy. *Int J Radiat Oncol Biol Phys* 2009; **74**: 1455-1460
- 3 **Warnecke-Eberz U**, Baldus SE, Bollschweiler E, Hoelscher AH, Metzger R. Up-regulation of survivin mRNA might be a marker for non-invasive detection of non-small cell lung cancer rather than for prognosis. *Anticancer Res* 2008; **28**: 1525-1529
- 4 **Yamashita S**, Chujo M, Miyawaki M, Tokuishi K, Anami K, Yamamoto S, Kawahara K. Combination of p53AIP1 and survivin expression is a powerful prognostic marker in non-small cell lung cancer. *J Exp Clin Cancer Res* 2009; **28**: 22
- 5 **Span PN**, Sweep FC, Wiegerinck ET, Tjan-Heijnen VC, Manders P, Beex LV, de Kok JB. Survivin is an independent prognostic marker for risk stratification of breast cancer patients. *Clin Chem* 2004; **50**: 1986-1993
- 6 **Xiaoyuan C**, Longbang C, Jinghua W, Xiaoxiang G, Huaicheng G, Qun Z, Haizhu S. Survivin: a potential prognostic marker and chemoradiotherapeutic target for colorectal cancer. *Ir J Med Sci* 2010; **179**: 327-335
- 7 **Rosato A**, Pivetta M, Parenti A, Iaderosa GA, Zoso A, Milan G, Mandruzzato S, Del Bianco P, Ruol A, Zaninotto G, Zanovello P. Survivin in esophageal cancer: An accurate prognostic marker for squamous cell carcinoma but not adenocarcinoma. *Int J Cancer* 2006; **119**: 1717-1722
- 8 **Branca M**, Giorgi C, Santini D, Di Bonito L, Ciotti M, Costa S, Benedetto A, Casolati EA, Favalli C, Paba P, Di Bonito P, Mariani L, Syrjänen S, Bonifacio D, Accardi L, Zanconati F, Syrjänen K. Survivin as a marker of cervical intraepithelial neoplasia and high-risk human papillomavirus and a predictor of virus clearance and prognosis in cervical cancer. *Am J Clin Pathol* 2005; **124**: 113-121
- 9 **Sharp JD**, Hausladen DA, Maher MG, Wheeler MA, Altieri DC, Weiss RM. Bladder cancer detection with urinary survivin, an inhibitor of apoptosis. *Front Biosci* 2002; **7**: e36-e41

S- Editor Yang XC L- Editor A E- Editor Yang XC