Beyond Interstitial Lung Disease: The Rapidly Evolving Role of Calgranulin B as a Biomarker of Systemic Malignancies

Shailendra Kapoor^{1,2,3}

KEY WORDS: calgranulin B; cholesteatomas; prostate cancer; ovarian carcinomas; prostate cancer.

TO THE EDITOR

The recent article by Bargagli et al. about the evaluation of Calgranulin B (S100A9) levels in the bronchoalveolar lavage fluid of patients with interstitial lung diseases was highly interesting and thought provoking [1]. Bargagli et al. have clearly shown that calgranulin B is involved in the evolution and progression of chronic lung diseases. Interestingly, calgranulin B is also rapidly evolving as a significant marker of a number of other systemic non-inflammatory conditions especially systemic malignancies.

For instance, calgranulin B is increased in the stools of patients with colorectal cancer [2]. Similarly, Ott et al. have even demonstrated that fluid drawn from cystic malignant ovarian lesions express calgranulin B in sharp contrast to fluid drawn from benign cystic lesions which do not demonstrate calgranulin B [3]. Similarly, increased expression of calgranulin B is seen in biopsies of patients with Barretts esophagitis who demonstrate high grade dysplasia [4] while similar increased expression of calgranulin B is also seen in head and neck tumors such as cholesteatomas [5]. Increased expression of the calgranulin B gene has also been noted in pulmonary carcinomas in conjunction with increased expression of other genes such as apolipoprotein E [6]. Similarly, matrix-assisted laser desorption ionization–time of flight–mass spectroscopy (MALDI–TOF–MS) analysis of voided urine following prostatic massage from patients with prostate cancer reveals increased levels of calgranulin B/MRP-14 [7].

These examples clearly indicate the massive diagnostic as well as prognostic potential of calgranulin B. Clearly,

there is a need for further large scale studies to elaborate the exact sensitivity and specificity of calgranulin B as a diagnostic marker in these various conditions so as to extend its use from beyond clinical studies to the realm of routine oncology.

REFERENCES

1. Bargagli, E., C. Olivieri, A. Prasse, et al. 2008. Calgranulin B (S100A9) levels in bronchoalveolar lavage fluid of patients with interstitial lung diseases. *Inflammation*. **31**:351–354. doi:10.1007/s10753-008-9085-z.
2. Yoo, B. C., Y. K. Shin, S. B. Lim, S. H. Hong, S. Y. Jeong, and J. G. Park. 2008. Evaluation of calgranulin B in stools from the patients with colorectal cancer. *Dis. Colon Rectum*. **51**:1703–1709. doi:10.1007/s10350-008-9381-6.
3. Ott, H. W., H. Lindner, B. Sarg, et al. 2003. Calgranulins in cystic fluid and serum from patients with ovarian carcinomas 1. *Cancer Res*. **63**:7507–7514.
4. Bax, D. A. 2007. High-grade dysplasia in Barrett's esophagus is associated with increased expression of calgranulin A and B. *Scand. J. Gastroenterol*. **42**:902–910. doi:10.1080/00365520601138189.
5. Holly, A., J. Bujia, K. Lempart, and M. Serge. 1995. Expression of calgranulin A and B in middle ear cholesteatoma. *Laryngorhinootologie*. **74**:33–35. doi:10.1055/s-2007-997682.
6. Zhang, H., B. Yue, Y. Jiyao, F. Qingtang, W. Yiming, and L. Neoplasms. 2007. Screening and identification of lung cancer associated proteins. *J. Fourth Mil. Med. Univ*. **28**:6–8.
7. Rehman, I., A. R. Azzouzi, J. W. Catto, et al. 2004. Proteomic analysis of voided urine after prostatic massage from patients with prostate cancer: a pilot study. *Urology*. **64**:1238–1243. doi:10.1016/j.urology.2004.06.063.

¹ Schaumburg, IL 690195, USA

² 75 Kristin Circle # 413, Schaumburg, IL 60195, USA

³ To whom correspondence should be addressed at 75 Kristin Circle # 413, Schaumburg, IL 60195, USA. E-mail: shailendrkapoor@yahoo.com