Human Leukocyte Antigen-ABDR Genes in Pulmonary Adenocarcinoma Cell Lines

To the Editor:

We read with great interest the article in CHEST (July 2002) by Masakazu et al., who observed a haplotype loss of class I human leukocyte antigens (HLAs) in several newly established lung cancer cell lines and identified it as a mechanism of tumor escape from the immunosurveillance system of the host. However, as for the HLA genes of lung cancer cell lines passing for many generations, such as the A549 and Calu-6 cell lines, there have been few reports, and the results have been inconclusive. Rimmelzwaan et al.1 reported that the genetic types of HLA-AB in A549 cell line become HLA-A26/ A25 and HLA-B44/HLA-B18, while Hanagiri et al.2 reported that the presentation of HLA-A in the A549 cell line becomes HLA-A30/HLA-A26. We present our results on genetic type HLA-ABDR in the A549 cell line (CCL-185 in the American Type Culture Collection) and in the Calu-6 cell line (HTB-56 in the American Type Culture Collection) via the polymerase chain reaction-sequence-specific priming method3 as follows: (1) HLA-A30/–, HLA-B44/–, HLA-DR7/HLA-DR53 (A549 cell line); and (2) HLA-A01/–, HLA-B08/–, HLA-DR17/DR 52 (Calu-6 cell line).

The reason for the different results in the two previously published studies3-4 on the A549 cell line may be the 97.6% homology between HLA-A25 and HLA-A26. However, our study results indicated that there is a haplotype loss of HLA-AB in the A549 cell line. Also, there is a haplotype loss in the Calu-6 cell line. Hence, our results strongly support the fact that there is a haplotype loss of HLA-AB in the A549 cell line. Therefore, our study results have been inconclusive. Rimmelzwaan et al.1 reported that the genetic types of HLA-AB in A549 cell line become HLA-A26/ A25 and HLA-B44/HLA-B18, while Hanagiri et al.2 reported that the presentation of HLA-A in the A549 cell line becomes HLA-A30/HLA-A26. We present our results on genetic type HLA-ABDR in the A549 cell line (CCL-185 in the American Type Culture Collection) and in the Calu-6 cell line (HTB-56 in the American Type Culture Collection) via the polymerase chain reaction-sequence-specific priming method3 as follows: (1) HLA-A30/–, HLA-B44/–, HLA-DR7/HLA-DR53 (A549 cell line); and (2) HLA-A01/–, HLA-B08/–, HLA-DR17/DR 52 (Calu-6 cell line).

The result is different from a reported study5 in which there was a haplotype loss of HLA class I genes, not only in these newly established cell lines, but also in those cell lines continuing for many generations, which may be one kind of biological action that allows the tumor to escape detection by the immunosurveillance system of the host.

The HLA-II gene is present in many kinds of tumor cells, such as lung cancer cells. Intriguingly, in spite of continuing for many generations, the two cell lines wholly retain the HLA-DR genes. The result is different from a reported study6 in which there was also found to be a haplotype loss of HLA class II genes in all of the three newly established lung cancer cell lines. The correlative mechanisms of “haplotype loss” and “whole retention” of HLA class I/II genes are novel, and it is necessary to determine their cause as the next step in research.

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Obstructive Sleep Apnea and Perioperative Complications

To the Editor:

We thank Hwang et al. for their work that correlates sleep-disordered breathing with postoperative complications; however, we would like to raise a few issues in this respect:

1. The authors have opined that screening modalities of obstructive sleep apnea (OSA) have largely been based on expert opinion with lack of clinical evidence. Such is clearly not the case: questionnaires like Berlin, STOP (Snoring, Tiredness during daytime, Observed apnea, high blood Pressure), and STOP-Bang (Body mass index, Age, Neck size, Gender) are available and have been clinically validated. The STOP and STOP-Bang questionnaires are particularly concise, easy to administer, and particularly validated in surgical patients and show high sensitivity for moderate-to-severe OSA. Clearly, use of such validated simple methods would be less cumbersome than the use of nocturnal oximetry as used here, and these could be used for future studies.

2. It has been established that OSA is associated with increased perioperative morbidity more so with general anesthesia and perioperative use of opioids. A sizable proportion of patients (62 of 172) underwent surgeries (gynecologic, urologic, and orthopedic), which, depending on site and type of surgery, could either have been done under regional or general anesthesia. The authors have not clarified the type of anaesthetic administered in these; nor have they clarified the protocol of general anesthesia, whether it was standardized for all patients, the analgesic modality followed in the various surgeries. These missing factors have a bearing on the perioperative outcome. In the absence of such information, it becomes difficult to interpret the contextuality of the data.

3. The inclusion of complications (GI bleed and intraperito-
neal bleed) completely unrelated to the topic under inves-

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tigation should have been left out from evaluation of complications because it could be a potential confounding factor.

We would like to add that the key to successful perioperative management of such patients lies in maintaining a high index of suspicion and tailoring the anesthetic technique and perioperative care in accordance with the patients’ clinical condition.

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