Reviewer's report

Title: Somatic mitochondrial DNA Alterations In Esophageal Cancer: Significance of Novel Missense and Frameshift Mutations and Alteration in mtDNA Content

Version: 1 Date: 21 December 2005

Reviewer: Kenji Hibi

Reviewer's report:

In this paper, the authors screened the entire mtDNA for somatic mutations in 20 esophageal carcinomas. They found 14 mtDNA mutations in 55% (11/20) of tumors. Eighty-two % (9/11) tumors exhibited mutations in the D-loop region. They also screened the mtDNA content in esophageal carcinomas using real-time quantitative PCR. They found that patients with somatic mtDNA mutations have higher chance than patients without mtDNA mutations to become metastatic. However, this result was not significant. They concluded that somatic mtDNA mutations were frequent and might play an important role in the tumorigenesis in esophageal carcinomas.

First of all, others have already showed that somatic mtDNA mutations in esophageal carcinomas were frequent (ref. 29). Although they insisted that the screening of entire mtDNA was important, most tumors exhibited mutations in the D-loop region as described above, suggesting that the examination of D-loop region was specifically important. Besides, they use TTGE to screen mtDNA mutations. The detection rate of mutations by TTGE would be much lower compared to that by DNA sequencing. To prove that the screening of entire mtDNA is important, I recommend using DNA sequencing directly instead of TTGE.

Although they examined the mtDNA content using real-time quantitative PCR, they could not find significant results. One problem would be that the sample size was too small (20) as they mentioned. The other problem would be the purity of tumor samples they used. To compare the relative amount of mtDNA in tumor to that in non-cancerous tissue, it is required that tumor samples do not contain many non-cancerous cells. I recommend using microdissection method to get tumor cells from tumor samples.

What next?: Reject because too small an advance to publish

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests