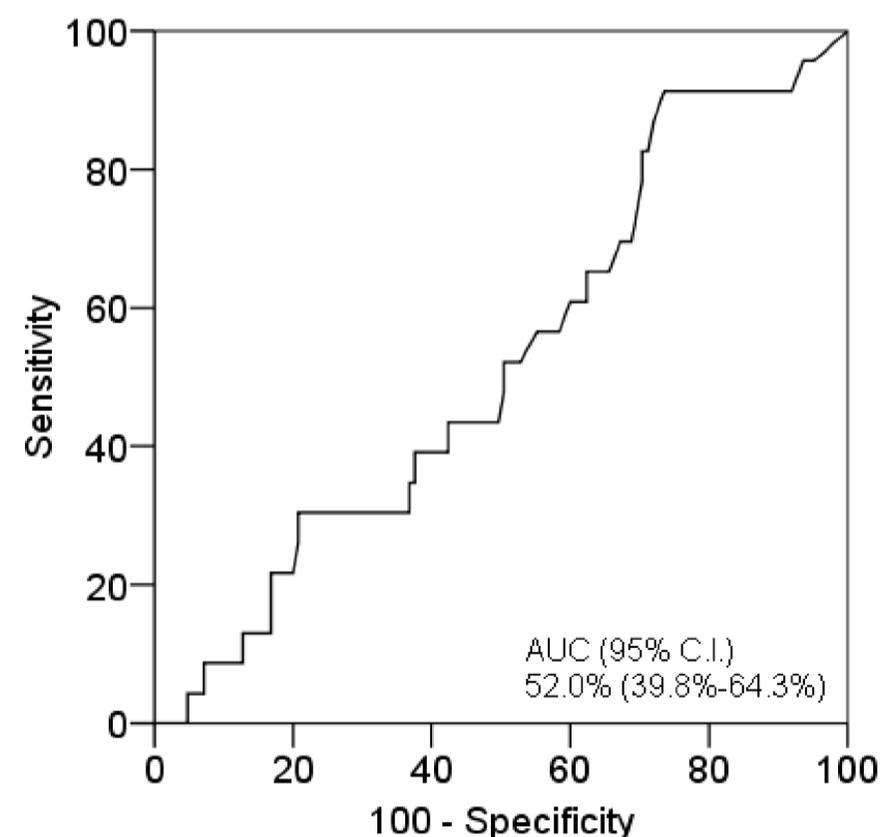
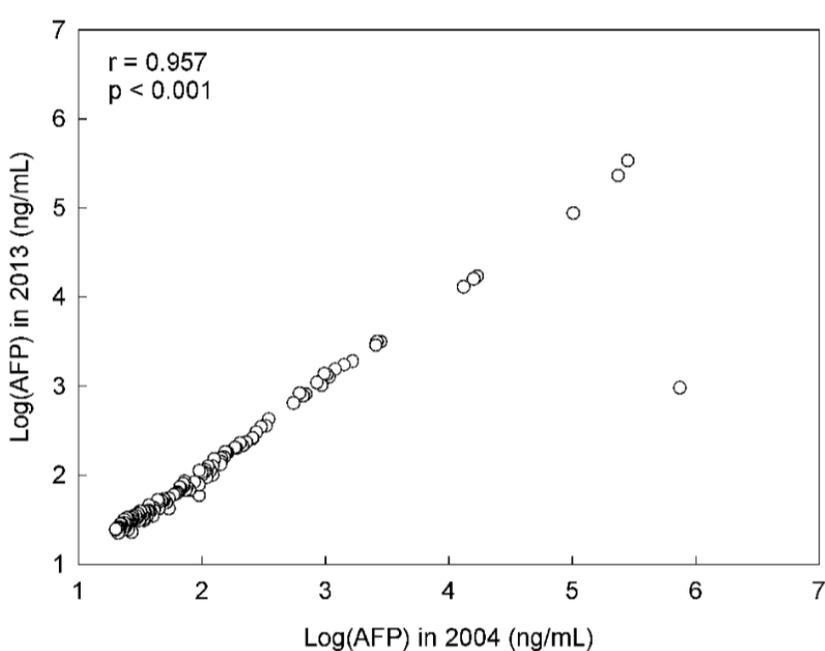


Did AFP-L3 save ultrasonography in community screen?

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Background In the community screening, those subjects with elevated serum alpha-fetoprotein (AFP) required further abdomen ultrasonography (US) to detect hepatocellular carcinoma (HCC). However, some chronic hepatitis patients might have elevated AFP. AFP-L3, has been proposed to differentiate HCC and hepatitis in elevated AFP cases in Japan for decades, but the utility is limited outside Japan. We conducted this study to elucidate the role of AFP-L3 in the community and the possibility of saving unnecessary US. **Methods** A total of 56702 subjects underwent a large-scale healthcare screening in Tainan county in 2004. Among them, 286 residents with AFP more than 20ng/ml further received US and 169 (59%) had stored baseline sera were enrolled into this study in 2013. Their AFP and AFP-L3 levels were further detected. HCC patients were initially identified through US and personal history.

Results Among 169 studied sera, only 148 (87.6%) samples still had AFP level more than 20 ng/ml after a 10-years frozen period. The decrease of AFP level was significant (481.3 ± 2093.8 ng/ml and 456.1 ± 2095.3 ng/ml in paired-T test, $p < 0.001$). Focusing on these 148 cases, 23 (15.5%) HCC cases were diagnosed at the baseline screening. There was no difference of AFP-L3 level between HCC and non-HCC cases. Using AFP-L3 to predict HCC, the area under Receiver Operating Characteristic curve was as low as 52%, $p = 0.757$.

Conclusions Too long frozen period might lower the quality of stored sera. Additionally, AFP-L3 could not provide more information for HCC identification to save advanced US examinations in the community screening.