F107 Elastin gene mutation in six patients with autosomal dominant Supravalvular aortic stenosis (SVAS)

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Supravalvular aortic stenosis (SVAS) is an inherited vascular disease that can cause heart failure and death. SVAS can be inherited as an autosomal dominant trait or as part of a developmental disorder, williams syndrome (WS). In this study, we performed fluorescence in situ hybridization (FISH), single strand conformation polymorphism(SSCP) and DNA sequence analysis in six korean sporadic SVAS cases to define elastin gene(ELN) mutations responsible for SVAS. In FISH analysis using commercial elastin gene probes (Oncor), we detected no deletion in all of six cases. This means that there is no large deletion spanning elastin gene in these cases. To define the spectrum of ELN mutation, SSCP and direct sequencing analyses were done. The results will be presented.

F108 Detection of Heterozygous Truncating Mutations in the StAR Gene by Using Stop Codon Assay in *E. coli*

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In this presentation, a screening method for detection of heterozygous truncating mutations in a congenital lipoid adrenal hyperplasia (CAH) patient by using a stop codon assay (SC assay) system in *E. coli* is introduced. As an alternative of the current FASAY (functional analysis of separated alleles in yeast)method, the very low-copy number plasmid pZC320 was used as a screening vector which allows effective separation of alleles for detection of heterozygous mutations. CAH is due to the mutation of StAR (steroidogenic acute regulatory protein) gene. PCR-directed sequencing showed that a CAH patient has a Gln258→stop heterozygote mutation in exon 7 of StAR gene. To evaluate efficacy of SC assay, PCR-amplified exon 7 of StAR gene was cloned into XhoI and BamHI site of pZC320. It was found that the clone with heterozygote mutant showed almost 1:1 ratio of blue/white colonies wherease normal controls produced blue colonies only. Also, single-strand conformation polymorphism (SSCP) and DNA sequencing of the cloned StAR gene showed that normal and mutant alleles of StAR gene were exactly separated into blue and white colonies, respectively. These results strongly demonstrate that our *E. coli*-based SC assay system is useful for rapid and precise detection of heterozygous truncating mutations in genes causing genetic diseases and genetic cancers.