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Philip J. Migliore, M.D.
Research Director
The Moran Foundation

Dear Dr. Migliore,

Find enclosed a progress report for our project, "Novel approaches to preservation and molecular anlaysis of postmortem tissue." Our initial studies have been gratifying, and we thank the Moran Foundation for its willingness to support our efforts.

Please do not hesitate to contact me should you require any additional information.

Sincerely,

Brett Casey, M.D.
Assistant Professor of Pathology

NOVEL APPROACHES TO PRESERVATION AND MOLECULAR ANALYSIS OF POSTMORTEM TISSUE

Progress Report June 1995

Brett Casey, M.D.

We have sought to establish methods for preservation of anatomic pathology material in a manner suitable for retrospective molecular analysis. Here we report our progress to date under each specific aim outlined in our original proposal.

1. Obtain postmortem blood and tissue samples for lymphocyte transformation and preparation of dried blood sports and solid-organ imprints. Thirty-two blood and tissue samples have been obtained from a total of eight autopsies conducted at Texas Children's Hospital. Five tissue imprints have been obtained for each of six autopsies and four surgical pathology specimens.

2. Develop protocol for establishing lymphoblast cell lines from postmortem blood and other tissues. A protocol has been developed for successful transformation of postmortem blood and other tissues: lymphoblast cell lines have been established from seven of the eight autopsies from which tissue was obtained.

3. Develop PCR-based haplotype and mutation assays by modifying protocols previously established for analysis of premortem dried blood spots from newborn screening programs. PCR amplification of the globin β^s region was successfully performed on several of the dried tissue imprints. This PCR product was shown to be suitable for subsequent restriction enzyme analysis and for hybridization with allele-specific oligonucleotides, both of which are standard methods in molecular diagnosis of sickle cell anemia. Reverse-transcriptase PCR was also performed successfully from mRNA microextracted from the dried tissue imprints.

In summary, we have accomplished our initial goals of developing new methods for preserving anatomic pathology material in a manner amenable to future molecular analysis. Future efforts will be directed toward incorporating these methods into routine handling of anatomic pathology specimens.

Presentations

Madu S, Zhang Y-H, Langston C, McCabe ERB, and Casey B. New methods for preserving genetic information fro pathology specimens. Annual Meeting, Society for Pediatric Pathology, Toronto, Canada (1995).