Early peri-operative hyperglycaemia and renal allograft rejection in patients without diabetes

ABSTRACT

The association between hyperglycaemia and an increased risk of allograft rejection is consistent with findings in patients with diabetes. We propose a causal link that is congruent with both epidemiological and in vitro studies and suggest that additional clinical research is necessary.

INTRODUCTION

Three homologous members make up the Fragile X Mental Retardation (FMR) protein family, with the FMRP being encoded by the x-linked FMR1 gene and its absence is linked to human hereditary mental retardation [reviewed in]. This family includes two other members: the Fragile X Related 1 (FXR1P) protein, coded in human by the FX2P gene located at 3q28 and 17p13.1, and another lineage that encodes two KH domains and a RGG box—motes in functional characteristic motifs of RNA-binding proteins. They also contain a nuclear localization signal (NLS) and NES, which make them putative nucleocytoplasmic shuttling proteins (reviewed in). There are indications that their functions may be related to RNA transport and/or translation. While FMRP is the cause of Fragile X Mental Retardation in human, it is unclear whether FXR1P and FxR2P are associated with any pathology or phenotype. Additionally, there is no evidence that these homologous proteins can counteract this absence. In vivo studies revealed that all three members interact with each other and in the same way. However, their expression patterns showed distinct patterns in certain tissues of mice and humans, suggesting that each protein may also function independently. Six different isoforms were identified and their levels were found to be specific to each cell type, indicating that FXR1P displays a complex expression pattern in various mammalian cell lines. They found four different FXR1P isoforms of MW 70 and 74 (previously called short) and later 78 and 80 kDa (long) are widely expressed in various cell lines as well as in mouse organs. The replacement of isoforms with novel MW 82 and 84 kDa super long isomerisms occurs in muscle. This phenomenon is evident during myogenesis of myocyte cell lines that can differentiate into mytubes. The model system that replicates, albeit imperfectly, muscle differentiation has enabled us to demonstrate, as previously mentioned, in the present report, that the short and long isoforms undergo a transitional event that coincides with the expression of muscle-specific genes, leading to the super long transition. Furthermore, we demonstrate that super long isoforms are expressed in low levels by undifferentiated myoblasts and are stored in the nuclei, whereas in different myogatubes, P82,84 are transferred to the cytoplasm and become part of mRNPs found in actively translating ribosomes.

CONCLUSION

This exploratory study demonstrates "...any association between the polymorphisms in codon 27 of ADRB2 and in [ADRB3] genes that may be associated with increased risk of breast cancer"; however, additional studies across larger samples and/or across different ethnicities are needed to further explore this effect.