KSN 2021
FULLY VIRTUAL MEETING
September 02 (Thu) - 05 (Sun)

Abstract Submission No. : 2287

Role of Histone deacetylases 2 in Glucocorticoid in the pathogenesis of resistant childhood nephrotic syndrome

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Objectives: Evaluation of HDAC2 expression in steroid resistant nephrotic syndrome (SRNS) patients .

Methods: HDAC2 expression was analyzed on renal biopsy samples by immunohistochemistry in SRNS patients (n=15 ¸ M=9 ¸ mean age 8.4±2.59), steroid sensitive nephrotic syndrome (SSNS) patients (n=25¸ M=5¸ mean age 9.85±7.08) and healthy control (HC) (n=6 ¸ M=3 ¸ mean age 20.47± 7.26). All definitions are as per the criteria of ISKD in Childhood ·
IHC was performed with formalin fixed, paraffin embedded tissue section following heat induced antigen retrieval in Tris EDTA buffer pH 8.6 ·
PBMCs were isolated from heparinized blood. RNA was isolated using trizol method. qPCR was performed using light cycler LC480 using SYBR green PCR technology, Relative gene expression levels were calculated and normalized to the corresponding levels of housekeeping gene (GAPDH).

Results: Demographic significant deference were found in S. Albumin (SSNS=2.87±98 ¸ SRNS=2.27±79 ¸ p=0.012) and proteinuria (SSNS=13.18±3.09¸ SRNS=284±193.45¸ p=0.001). HDAC2 nuclear expression in HC and steroid dependent samples was significantly higher as compared to the nuclear expression of HDAC2 of SRNS patients 86.6 percent¸ p=0.002· HDAC2 mRNA expression remained similar in PBMCs of SSNS patients p=0.730 as compared to that of HC whereas in SRNS patients was significantly decreased p=0.023.

Conclusions: Lower HDAC2 nuclear and gene expression in SRNS patients suggests use of inducers, which might lead to restoration of glucocorticoid response and better management of patients.