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당뇨병성 신증에서 Peroxisome proliferator-activated receptor-δ의 신보호 효과

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Peroxisome Proliferator-activated Receptor-δ Activation Ameliorates Albuminuria and Restores Urinary Filtration Barrier Integrity in Experimental Diabetic Rats

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Objective: This study investigated the effects of GW610742, a highly specific agonist for peroxisome proliferator-activated receptor (PPAR)-δ, on diabetic nephropathy.

Research Design and Methods: Type 2 diabetic Otsuka Long-Evans Tokushima Fatty rats were randomized into an untreated diabetic (n=9) and a GW610742-treated diabetic group (n=9). Long-Evans Tokushima Otsuka rats (n=9) were used as a non-diabetic control.

Results: Albuminuria was markedly increased and renal PPAR-δ expression was decreased in diabetes. The diabetic renal injury markers, glomerular basement membrane thickening, decreased number of slit pores between podocyte foot processes, decreased nephrin expression and increased desmin expression, were significantly restored associated with prevention of albuminuria by GW610742. PPAR-δ agonist GW610742 markedly increased nephrin expression in cultured podocytes.

Conclusion: PPAR-δ activation by GW610742 prevented diabetic albuminuria via preventing diabetes-induced nephrin loss and restoring podocyte integrity, implying that GW610742 might become a potential therapeutic agent for diabetic nephropathy.

Key Words: PPAR-δ, 당뇨병성 신병증, 알부민뇨증
PPAR-δ, Diabetic nephropathy, Albuminuria