

DEVELOPMENT OF DIET INDUCED EXPERIMENTAL NEPHROTIC SYNDROME MODEL IN RATS - EFFECT OF HIGH PROTEIN AND HIGH PROTEIN HIGH FAT DIETS ON KIDNEY FUNCTION. Park, Y.J., Kim, M.S., Park, Y.J. Department of Food and Nutrition, Seoul National University, Seoul 151-742, Korea.

The effect of high protein and high protein high fat diets on kidney function was studied in Sprague-Dawley rats fed 40% casein diet and 20% beef tallow diet containing 40% casein for 8, 12, 16 weeks, respectively. The concentrations of LDL-cholesterol was significantly high in high protein diet group of 8 weeks. The levels of serum total lipids were elevated by 64,100 and 100% in high protein high fat diet groups of 8, 12 and 16weeks, respectively, indicating diet induced hyperlipidemia. There were no significant differences in serum protein, albumin and A/G ratio among diet groups. There were, however, significant increase of serum urea nitrogen in high protein diet group during all experimental periods and increment of urinary urea nitrogen both in high protein diet and high protein high fat diet groups of 12 and 16 weeks. Although GFR as creatinine clearance was not significantly changed, there was marked increase in urinary protein excretion in high protein diet group of 16 weeks. Liver total lipid was significantly increased in high protein high fat diet group during all experimental periods without changing liver weight. There were no differences in kidney and fecal weight and lipids, triglyceride and cholesterol contents. The results of light microscopic examination indicated that glomerulosclerosis was not observed. Even though glomerulosclerosis associated with nephrotic syndrome was not detected for several limitations including short observation period, the study results suggest that high casein diet might induce the development of experimental nephrotic syndrome model in rats.