

6. ETIOLOGICAL FACTORS AND THERAPEUTIC PERSPECTIVES IN DISTAL RENAL TUBULAR ACIDOSIS



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Introduction. Distal renal tubular acidosis (DRTA) is characterized by decreased acid excretion in the distal tubule, resulting in metabolic acidosis. Complications such as bone disease, growth failure, urolithiasis, and hypokalaemia are associated with this rare pathology. However, due to its rarity, treatment lacks standardization, leading to contradictory reported outcomes. While corticosteroids are commonly used, various other immunosuppressive drugs are suggested for treatment.

Aim of study. This study aimed to investigate the etiopathogenetic factors involved in DRTA development. The objective was to determine pathogenesis peculiarities, and therapeutic strategies associated with this condition. This study aimed to understand better and possibly find new ways to prevent and treat the condition.

Methods and materials. Research articles from 2018 to 2023 were gathered using keywords like "distal tubular renal acidosis" and "inheritance." Initially, 164 primary sources were identified, and 14 were selected for analysis, forming the basis of this review.

Results. Triggers of DRTA include genetic factors affecting kidney acid-base regulation (mutations in ATP6V0A4, ATP6V1B1, FOXI1, SLC4A1, WDR72), autoimmune diseases (e.g., Sjögren's syndrome, lupus), medications (certain diuretics, anti-retrovirals, and antibiotics), CKD, obstructive uropathy, sickle cell disease, and primary hyperparathyroidism. Therapeutic strategies focus on individualized plans, managing acid-base imbalances, and addressing associated complications. These strategies involve alkali therapy (oral supplements like potassium citrate or sodium bicarbonate), electrolyte balance maintenance (especially potassium), calcium and vitamin D supplementation for bone health, treatment of underlying conditions (autoimmune diseases, CKD), kidney stone monitoring and prevention, and dietary modifications.

Conclusion. The study revealed that several factors contribute to the development of DRTA in various ways. Genetic mutations, autoimmune conditions, medications, and various pathophysiological states emerged as potential triggers. The treatments, though personalized, focus on fixing acid levels in the body and handling problems that come with the condition. Despite corticosteroid usage, treatment variability persists, warranting further exploration of alternative immunosuppressive agents for optimal efficacy. This review aims to deepen understanding of DRTA, potentially guiding the development of targeted preventive strategies and more effective therapeutic interventions. Standardized protocols are essential, necessitating continued research and clinical trials to enhance outcomes and elevate the quality of life for individuals affected by DRTA.