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Letter to Editor

The Role of Thiazide Diuretics in Treating Idiopathic Hypercalciuria Complications in Children

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Dear Editor,

Idiopathic hypercalciuria (IHC) is a prevalent disorder during childhood and a significant contributor to the formation of renal stones and urinary tract infections (UTIs). Thiazide diuretics, such as hydrochlorothiazide (HCT), are widely accessible, affordable, and easy to administer, with minimal side effects. These characteristics make them acceptable pharmacological options for treating hypercalciuria. The use of thiazides enhances calcium reabsorption from distal renal tubules, reducing hypercalciuria, and potentially preventing associated complications.

Numerous studies have confirmed the beneficial role of HCT in addressing various complications associated with IHC in pediatric patients.

HCT was administered to 59 children with IHC and recurrent UTI, resulting in no UTI recurrence for 95% of these patients [1]. Another single-blind randomized clinical trial involving 100 girls aged 1 to 12 years with IHC and at least two UTIs within a year demonstrated that all patients treated with HCT became normocalciuric. However, treating hypercalciuria did not have a significant impact on UTI prevention [2]. Consequently, further exploration in this area is warranted.

Preliminary research indicates that the long-term use of thiazide diuretics is correlated with decreased recurrent kidney stone incidence. Nevertheless, due to limited evidence and the economic burden of chronic medication, these drugs have not been advised for preventing recurrent kidney stones [3].

In children with IHC, HCT has been shown to positively affect bone mineral density [4]. Thiazides have positive effects on osteoblastic cell proliferation and activity. Thiazide therapy may improve bone formation and mineralization by inhibiting osteocalcin expression by osteoblasts [5]. In contrast, García-Nieto et al. determined that children with IHC and osteopenia who were given thiazides for 2.4 years had no improvement in bone mineral density (z-BMD) compared to controls [6]. The results may have been confounded by growth during the study period.

Another aspect to consider in the relationship between IHC and HCT is the potential effect of drugs on nocturnal enuresis. Children with IHC are commonly prescribed HCT to treat nocturnal enuresis, and our study confirmed that a single daily dose of HCT (1 mg/kg/day) was a safe and efficient treatment option [7].

As a result, HCT seems to be an effective and safe medication for treating IHC-related complications in children. However, there are still controversies regarding the effect of HCT on complications, such as UTI and osteopenia in IHC, and additional research is required to gain a more comprehensive understanding of the drug's efficacy and safety in larger populations.

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