

**THE USE OF HORMONE REPLACEMENT THERAPY IN
POSTMENOPAUSAL WOMEN IMPROVES THE EFFECTIVENESS OF
OSSEointegration OF DENTAL IMPLANTS, CONTRIBUTING TO
BETTER LONG-TERM CLINICAL OUTCOMES OF IMPLANT TREATMENT**

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Relevance.

The postmenopausal period in women is characterized by pronounced hormonal alterations, primarily a decline in estrogen levels, which leads to reduced bone mineral density and impaired regenerative capacity of bone tissue. These changes significantly complicate the osseointegration of dental implants, increasing the risks of implant instability, failure, and prolonged rehabilitation. Modern implantology requires careful consideration of the patient's systemic condition, especially in postmenopausal women. Hormone replacement therapy (HRT), aimed at compensating for estrogen deficiency, has demonstrated potential in restoring bone metabolism and creating favorable conditions for osseointegration. Investigating the effectiveness of HRT in the context of dental implantation is a relevant and promising direction that may enhance the quality and predictability of treatment outcomes in this patient population.

Aim.

To improve the effectiveness of achieving primary stability during immediate implant placement by selecting an implant design that takes into account the anatomical structure of the patient's bone tissue.

Materials and Methods.

Achievement of high primary stability in specific regions of the jaw was pursued through individualized bone tissue assessment protocols, along with the reduction of patient rehabilitation time.

The study included 114 postmenopausal women who underwent dental implantation. All women received a comprehensive examination to identify alterations in bone-mineral metabolism, evaluate hormonal status, and assess structural characteristics of the alveolar bone. Following the initial assessment, all patients underwent dental implantation using a protocol modified for women in premenopause, menopause, and postmenopause.

This branch of the study included a comparative analysis of the dynamics of implant osseointegration in postmenopausal women depending on the use of HRT. The HRT group included 58 women, 24 of whom had parathyroid hormone (PTH) levels below the median, and 38 above the median.

The comparison group consisted of 56 women (24 with PTH levels below the median and 32 above the median).

Results of the Study.

The findings demonstrated that HRT significantly enhances the activity of dental implant osseointegration.

By the 3rd month of follow-up, implant stability scores among women receiving HRT increased markedly compared to the values recorded immediately after implantation ($p < 0.001$) and were significantly higher than in the non-HRT group ($p < 0.001$; Fig. 3.6).

By the end of the first year of follow-up, implant stability increased in both groups ($p < 0.001$ compared to baseline in the HRT+ and HRT- groups). However, the relative dynamics of the MEGA-ISQ score were significantly greater among women receiving HRT ($p < 0.001$ for both relative dynamics and the achieved absolute MEGA-ISQ score at 1 year; Fig. 3.7).

Conclusions.

The study showed that elevated parathyroid hormone levels are associated with reduced alveolar bone density and slower osseointegration of dental implants. The use of HRT reduces the negative effects of hyperparathyroidism—most prominently during the first 3 months after implantation. However, the beneficial influence of HRT persists over time, resulting in higher implant stability scores throughout the follow-up period