

Do antidepressant drugs leads to dental implant failure

Sir,

For the last 30 years, dental implants have been used to treat patients with partial and complete edentulism. Osseointegration of dental implant is very crucial for the clinical success of dental implants. Prof. Brånemark defined osseointegration as “a direct connection between living bone and a load-carrying endosseous implant at the light microscope level.”^[1]

Today, depression is a globally prevalent disorder with a complex mental illness that is associated with significant disability and reduced quality of life. It is one of the most common psychiatric illnesses, which affects more than 12% of men and 20% of women at some point in life.^[2] The cause of depression is due to the low levels of serotonin. First-line of antidepressant medications recommended is Selective serotonin reuptake inhibitors (SSRIs), and it is supported by the guidelines of the American Psychiatric Association.^[1]

SSRIs have been reported to reduce bone formation and increase the risk of bone fracture. Wu *et al.* conducted a retrospective cohort study on patients treated with dental implants. A total of 916 dental implants in 490 patients were used to find the risk associated with the use of SSRIs. After 67 months of follow-up, 38 dental implants failed and 784 succeeded in the non-SSRI-users group while 10 failed and 84 succeeded in the SSRI-users group. The result showed that treatment with SSRIs is associated with an increased failure risk of osseointegrated implants.^[3]

Another study conducted by researchers at the University at Buffalo, School of Dental Medicine, found that the use of antidepressants increased the risk of implant failure by

four times. The retrospective study analyzed 74 patients who received dental implants at the UB Dental Clinic. In clinical observations, a high percentage of dental patients are on SSRIs. Sulochana Gurung, a student researcher at UB, who presented the findings at the American Association of Dental Research meeting in Los Angeles stated that frequency of antidepressant use was higher in patients who experienced implant failure (33.3%) compared with those who did not (11.3%).^[4]

In bone metabolism, SSRIs block serotonin transporters (5-HTTs) on bone cells, resulting in a direct negative effect on bone formation and metabolism by increasing osteoclast differentiations and inhibiting osteoblast proliferation. As a result, SSRIs decrease bone mass and bone mineral density at an annual reduction rate of 0.60–0.93% increasing the risk of osteoporosis.^[3]

It is advised to do a thorough preoperative assessment of dental patients including the medications; they are taking for illness if any. A proper treatment planning for implant placement in patient on SSRI is advised. At present, there are very few literature and studies available on the effect of SSRI on dental implants so further studies should be done investigating the dose-effect relationship and duration for which patient is on SSRI and its possible effects on implants.

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Conflicts of interest

There are no conflicts of interest.

**Sunil Kumar Mishra, Puja Hazari¹,
Ramesh Chowdhary²**

Department of Maxillofacial Prosthodontics and Implantology, Peoples College of Dental Sciences and Research Centre, ¹Department of Maxillofacial Prosthodontics and Implantology, People's Dental Academy, Bhopal, Madhya Pradesh, ²Department of Maxillofacial Prosthodontics and Implantology, Rajarajeswari Dental College and Hospital, Bengaluru, Karnataka, India

Address for correspondence:

Dr. Sunil Kumar Mishra,

Department of Maxillofacial Prosthodontics and Implantology,

People's College of Dental Sciences and Research Centre,

Bhopal, Madhya Pradesh, India.

E-mail: drsunilmishra19@gmail.com

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