

Potential Therapeutic Effect of Obestatin in Oral Mucositis

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Abstract : Objectives: There are numerous strategies for the prevention or treatment of oral mucositis. However, their effectiveness is limited and does not correspond to expectations. Recent studies have shown that obestatin exhibits a protective effect and accelerates the healing of gastrointestinal mucosa. The aim of the present study was to examine the influence of obestatin administration on oral ulcers in rats. Methods: lingual ulcers were induced by the use of acetic acid. Rats were treated twice a day intraperitoneally with saline or obestatin (4, 8, or 16 nmol/kg/dose) for five days. The study determined: lingual mucosa morphology, cell proliferation, mucosal blood flow, and mucosal pro-inflammatory interleukin-1 β level (IL-1 β). Results: In animals without induction of oral ulcers, treatment with obestatin was without any effect. Obestatin administration in rats with lingual ulcers increased the healing rate of these ulcers. Obestatin given at the dose of 8 or 16 nmol/kg/dose caused the strongest and similar therapeutic effect. This result was associated with a significant increase in blood flow and cell proliferation in gingival mucosa, as well as a significant decrease in IL-1 β level. Conclusions: Obestatin accelerates the healing of lingual ulcers in rats. This therapeutic effect is well-correlated with an increase in blood flow and cell proliferation in oral mucosa, as well as a decrease in pro-inflammatory IL-1 β levels. Obestatin is a potentially useful candidate for the prevention and treatment of oral mucositis. Acknowledgment: Agnieszka Stempniewicz acknowledges the support of InterDokMed project no. POWR.03.02.00- 00-I013/16.

Keywords : oral mucositis, ulcers, obestatin, lingual mucosa

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