Objectives: The purpose of this study was to evaluate the effects of melatonin on the oxidative status in brain tissue after experimental periodontitis in rats. Methods: Thirty Wistar Albino male rats were used and divided into four groups as follows: healthy + saline solution (Hs, n=7), healthy + melatonin (Hm, n=7), periodontitis + saline solution (Ps, n=8) and periodontitis + melatonin (Pm, n=8). Experimental periodontitis was induced with ligature placed at the gingival margin of the maxillary second molars. Melatonin was applied 10 mg/kg per day intraperitoneal for 2 weeks. After sacrfification, malondialdehyde (MDA), superoxide dismutase (SOD), and glutathione peroxidase (GSH-Px) levels were evaluated in the brain tissue. Results: GSH-Px levels were higher, MDA levels were lower in the Hm groups than in the Hs groups. The Pm group had lower MDA levels and higher GSH-Px levels than those in the Ps group. SOD levels were similar among the groups. Conclusions: Melatonin may be considered as a potential agent against to oxidative damage in periodontitis and brain disease by reducing lipid peroxidation.