Background: High-flow nasal cannula (HFNC) is an alternative to conventional normobaric oxygen therapy (NBO) for hypoxemic patients. Since nothing is known about its effect on carbon monoxide (CO) poisoning, we hypothesized that HFNC might be a useful device in the treatment of CO poisoning victims.

Material/Methods: We retrospectively reviewed the medical records of patients who were admitted consecutively to the emergency department with CO intoxication. Patients were divided into 2 groups: patients treated with HFNC and patients treated with conventional face mask (CFM). Demographic data, pretreatment, and control (after 1 hour) arterial blood gas analyses values of the patients were evaluated.

Results: Sixty-eight patients (mean age 35.8±18.7 years) were included in this study. NBO was given via HFNC to 38 patients (55.9%), and via CFM to 30 patients (44.1%). The demographic characteristics and pretreatment values of carboxy-hemoglobin (COHb) were similar in the 2 groups. The mean COHb value of the HFNC group at the first hour was found significantly lower than the CFM group: 9.5±4.7 and 12.0±5.1, respectively (P=0.041). Improvement of COHb level was significantly higher in the HFNC group compared to the CFM group: 12.5±4.5 versus 6.7±3.7, respectively (P=0.001).

Conclusions: HFNC was superior than CFM in alleviating COHb levels in the victims of CO poisoning. We believe that using HFNC will increase patient comfort by shortening the duration of treatment in emergency department settings, especially in patients who have mild clinical findings of CO poisoning.