

level. Tests were selected to study several types of memory, that is, long-term and working memory (verbal Buschke's test) and short-term memory (digit span [verbal] and Corsi's test [visual]). Other tests addressed disturbances of attention (simple reaction-time test, verbal fluence test) and divided attention (reaction time test with double task and color and word decoding test). The only tests indicating a lower performance of patients were for number recall and fatigability (mean reaction time was higher for the second part of the trial than for the first part). The results did not correlate with the end-of-exposure to COHb. In several other tests, patients showed a better performance than controls, some of these tests showed a positive correlation between result and the end of exposure to COHb. The authors concluded that 1 month after the incident, the memory of the patients was not lower than in paired controls and was even higher for learning and word recall.

2.3. Developmental and Reproductive Toxicity

Koren et al. (1991) described a prospective, multicenter study of acute CO poisoning during pregnancy. Between December 1985 and March 1989, a total of 40 cases of CO poisoning during pregnancy were collected. All pregnant women were in good health prior to the CO poisoning and had not suffered from a known chronic illness. The 40 pregnancies included three twin births, one termination of pregnancy at 16 weeks of gestation, and four births that were pending. The CO poisoning was caused by malfunctioning furnaces ($n = 23$), malfunctioning water heaters ($n = 7$), car fumes ($n = 6$), methylene chloride exposure ($n = 3$), and yacht engine fumes ($n = 1$). The exposure occurred during the first trimester ($n = 12$), second trimester ($n = 14$), or third trimester ($n = 14$). The clinical grade of poisoning was based on clinical signs and symptoms as shown in Table 2-9. Cases in which COHb values were available or could be estimated from the known ambient CO concentrations are presented in Table 2-10. Adverse fetal outcome occurred only after grade 4 or 5 poisoning.

Caravati et al. (1988) reported on six cases of acute CO poisoning during pregnancy (all cases of patients with CO poisoning during pregnancy admitted to two teaching hospitals in Salt Lake City during a 2-year period). Results of COHb measurements and outcomes are given in Table 2-11. Cases 5 and 6 were treated with 100% oxygen for 5 h before the COHb measurement, which is between 3 and 4 half-life times of CO under this condition, using a half-life time of 80 min for treatment with 100% oxygen (Peterson and Stewart 1970). It can be concluded that at the end-of-exposure, COHb values were about 8-16-fold higher and thus were about 40-80% in case 5 and 22-44% in case 6. In conclusion, the three cases of stillbirths were associated with maternal COHb concentrations of 22% or higher.