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**A comparison of conditional responses induced by various drugs**

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Conditional cardiovascular and autonomic responses can be established in experimental animals using drugs of various types as unconditional stimuli (Bykov, 1957; Lang, Brown, Gershon & Korol, 1966; Lang, Ross & Glover, 1967).

Using atropine (0.5 mg/kg, intravenously) and morphine (2 mg/kg, subcutaneously) in dogs, a comparison has been made of the ease of producing conditional changes in the electrocardiogram, salivation and gastric secretion. An electric buzzer and the constant laboratory procedure served as the conditional stimulus which was paired with the unconditional stimulus (drug injection), and tests for conditioning were made after the seventh, fourteenth and twenty-first pairings. Conditional salivation resulted with both drugs after the seventh pairing. Conditional responses in gastric secretion and heart rate resulted in dogs given morphine after the seventh pairing but not in dogs given atropine even by the twenty-first pairing.

In other dogs, conditional cardiovascular changes occurred with yohimbine (0.2-0.8 mg/kg, intravenously) or nicotine (16 mg/kg, intravenously) as unconditional stimuli. When phentolamine (0.5 mg/kg, intravenously) or hexamethonium (10-20 mg/kg, intravenously) was used as the unconditional stimulus, however, the results were inconstant. The findings support the view that conditional responses are more readily established with drugs that have a central component of action than with drugs that act only peripherally.

Using glyceryl trinitrate (0.6 mg, sublingually in humans, or 0.5 mg/kg, intravenously in dogs) as the unconditional stimulus, conditional responses have been established in the heart rate of human volunteers and dogs. Conditional responses occurred in a shorter time in the human subjects.

Conditional responses to drugs may play a part in the placebo response and should be considered in the interpretation of double-blind clinical trials.

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