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as smoking. Injection of 1 mg of nicotine during hypoxia resulted in excessive hyperventilation of short duration; injection of 3 mg produced in some cases euphoria, in other cases signs of intoxication in the form of acropaesthesiae, nausea and vomiting.

According to Schievelbein (2) there was an increase of blood pressure and heart rate following nicotine application. Changes of the ecg were not described.

Acute nicotine poisoning in man has been recorded only in a few cases. Ecg changes observed in acute nicotine poisoning in man could of course only be recorded with delay. Ecg changes comprised bradycardia, arrhythmias, depression of ST segment, low and isoelectric T-waves (3). Sinus bradycardia, arrhythmias of the extrasystole type, sino-aureicular block, paroxysmal auricular fibrillation have been reported but also tachycardias, high T-waves and depressed ST segments (Erstickungs-T) (4, 5, 6).

All investigated cases of nicotine poisoning provoked temporary ecg changes. There is nothing to indicate that nicotine in large doses could cause myocardial damage or infarction.

The effect of nicotine on ecg changes has been studied mainly in cats, rabbits, rats and guinea pigs (6, 7, 8, 9). Ecg changes may be summarized as follows (11):

1. bradycardia of 10 to 20 minutes' duration with simultaneous arrhythmia
2. tachycardia, extrasystoles, sino-aureicular block, auriculo-ventricular block
3. very high, sharp T-waves, AV-block of first degree

Altogether it may be said that findings are manifold, partly very different or even contradictory.

As far as we know, the effect of nicotine on the ecg in pigs has not been investigated yet. In the following it is reported on an experiment with pigs having received high doses of nicotine.

**Material and method**

28 SPF-pigs of German landrace (farmers: Schaumann, Hülsenberg) with a body weight of about 30 kg were used for the LD_{50} study. For the determination of the LD_{50}, animals were injected i.v. with a logarithmically increasing dose beginning at 0.126 mg/kg body weight.

10 animals of the same strain (body weight between 32 and 62 kg) were used for electrocardiographic studies. These animals received intravenous nicotine injections of 0.126 and 0.378 mg/kg body weight at 15 minutes' interval.

Nicotine was injected via venous catheters implanted into the vena jugularis externa according to the technique of Marshal et al. (10). A natrium nitrate solution or Liquemin® in physiol. saline (1:10) was used for preventing thrombosis.

Nicotine in physiol. saline was injected at three different concentrations: 3%, 1% and 0.3%. The different concentrations were chosen because of the rapidly commencing effect of nicotine.