

## OPTIMUM VALUE OF MAC DURING HALOTHANE INHALATION ANAESTHESIA

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### Abstract

**Background:** Uptake of inhalation anesthetics may be measured as the amount of anesthetic infused to maintain a constant alveolar concentration of anesthetic with halothane. We converted the values to those that would be obtained at 1.2 minimum alveolar concentrations (MAC). Inhalational anaesthesia is a result of gas delivery in the body by the respiratory tract in order to induce loss of normal sensation (anaesthesia). An important concept in the comparison of inhalational anaesthetics is the measurement of potency known as MAC of the anaesthetic substance.

**Patients and methods:** 50 patients (mean age  $47.4 \pm 7.9$  years) ASA I and II were scheduled for elective general surgery. The first thirty minutes of the operation, all the patients were treated with halothane at 1.2 MAC value and mean blood pressure and heart rate were monitored. The second thirty minutes of the operation, halothane at 2 MAC value was used and the same monitoring of clinical parameters followed.

After the sixtieth minute till the end of the operation all the patients were treated with halothane at 1.2 MAC value.

**Results:** There is a significant difference concerning mean arterial pressure in time depending on halothane MAC values ( $p=0,001$ ), and a good correlation was also found between MAC values and mean blood pressure of  $r=0,612$ ,  $p=0,02$ . while no

correlation was found between halothane end tidal and heart rate of  $r=0,054$ ,  $p=0,651$

**Conclusion:** Optimum value of MAC during halothane inhalational anaesthesia corresponding to optimal blood pressure was 1.2.

**Keys words:** MAC, inhalational anaesthesia, mean arterial pressure, heart rate.

### Introduction

Inhalational anaesthesia is a result of gas delivery in the body by the respiratory tract in order to induce loss of normal sensation (anaesthesia). During absorption and delivery, some portions of anaesthetic agents are present, which eventually results in loss of sensation.

An important concept in the comparison of inhalational anaesthetics is the measurement of potency known as MAC (minimal alveolar concentration) of the anaesthetic substance.

Clinical measurement of the depth of anaesthesia has already been discussed to have originated directly from the patient and to have disclosed the normal physiological response to be measured and used in practice. The best evaluator of anaesthetic potency is MAC (1,2,3,4,8,9,11,13).

Minimal alveolar concentration is analogous to the computerized values of ED<sub>50</sub> according to the respective curve of the pharmacological dose. In this way the potency of different inhalational agents can be