Short Communication (NS-3)

ANTI-NARCOSIS EFFECTS OF ESSENTIAL OIL OF *Rosa damascena* MILL AFTER INHALATION IN RATS

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Received November 07, 2012  Accepted February 03, 2013

**ABSTRACT**

Ibn Baytar says that according to Zakariya Al-Razi, the rose suppresses the Khumar (narcosis). Hence an experiment was undertaken to determine the anti-narcosis properties of the essential oil of rose. The sodium pentobarbitone induced hypnosis test was carried in rats. The rats were divided in two groups. The test group was given inhalation of rose oil while control group was given inhalation of distilled water. The analysis of Pentobarbitone-induced sleeping time in rats reveals that the sleeping time in the test group was less than one-third of the control group and extremely significant difference was found confirming the anti-narcosis effects of inhalation of essential oil of *Rosa damascena* Mill.

**Key Words :** Rose, Sodium pentobarbitone, *Rosa damascena* Mill, Anti-narcosis, Rats

**INTRODUCTION**

According to Unani Classical literature Smelling and local application of rose water cures hot headache its *Lakhslakha* (inhalation) makes the brain and internal senses strong, produces pleasure, relieves khumar (narcosis) and unconsciousness, palpitation removes narcosis but with alcohol it is very mufarreh (exhilarant, euphoriant). It is useful in insanity, melancholia, amnesia. Aroma inhalation and local application of its essential oil is useful in angina.¹ The above description of effects of rose smell and aromatherapy rose oil is exhilarant and anti-aggressive as observed by another experiment, but there was no any experiment to show the dafeh khumar (ant-narcosis) activities of rose or inhalation of essential oil of rose.

**AIMS AND OBJECTIVES**

To study the anti narcosis activities of essential oil of rose in experimental animal, albino rats of either sex as per.

**MATERIAL AND METHOD**

The Sodium pentobarbitone-induced hypnosis potentiation test was carried out in albino rats of either sex, weighing 100 to 150 gm, to detect the possible tranquillizing and/or CNS depressant activities in the Test Drug, i.e. Essential oil of Rose (ER). The rats were kept on fasting for 18 hours. They were divided into 2 groups, control and the test, each group comprising of 6 rats. The rats of control group were given inhalation of only 1.5 ml. of distilled water in a separate glass chamber (developed by us) measuring 5”x 5”x 9” to which the nozzle of a nebulizer (Microlux make) was attached. Inhalation was given until it was finished (10 minutes). The rats of test group were given inhalation of Essential oil of Rose (ER) in a glass chamber (developed by us) measuring 5”x 5”x 9” to which the nozzle of a nebulizer (Microlux make) was attached. One drop of essential oil was mixed in 1.5 ml of water and the inhalation was given until it was finished (10 minutes). The rats of both groups were kept in their inhalation chambers for further 10 minutes. After taking rats out of inhalation chamber, they were allowed to remain in their usual cages for 45 minutes before administering them the dose of sodium pentobarbitone.

The Sodium pentobarbitone (as a solution of 5 mg/ml of distilled water) was given in dose of 30mg/kg body weight intra-peritoneal, 45 after the administration of the solution of ER / plain distilled water in the form of inhalation. All the animals were tested for the righting
The sleeping time of animals was measured as the interval between the loss and the recovery of the righting reflex. The sleeping time of test and control animals were compared statistically by the Student’s ‘t’ Test.

**RESULTS AND DISCUSSION**

The analysis of Pantobarbitone-induced sleeping time in rats reveals that the sleeping time in the test group was less than one-third of the control group and extremely significant difference was found. (Table 1) and (Fig. 1)

### Table 1: Analysis of Pentobarbitone induced sleeping time in rats

<table>
<thead>
<tr>
<th>Rats</th>
<th>Sleeping time (in minutes)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control group</td>
<td>Test group</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>199</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>210</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>175</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>185</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>205</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>195</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>187</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>201</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>194.63</td>
<td>52.375</td>
<td></td>
</tr>
<tr>
<td>S.E.</td>
<td>4.097</td>
<td>2.360</td>
<td></td>
</tr>
<tr>
<td>p Value</td>
<td></td>
<td>$&lt;0.0001^*$</td>
<td></td>
</tr>
</tbody>
</table>

![Fig. 1](image-url): Pentobarbitone induced sleeping time in rats

The other thing which was observed in this test, the animals of the test group were sniffing at the time of their righting reflex and simultaneously rhinorrhea was also found in all the test animals. In Unani literature, it is clearly mentioned that – the rose enhances the quwa (faculties) and arwah (vital spirits) its Lakhlakha (inhalation) makes the brain and internal senses strong, relieves khumar (narcosis) and unconsciousness, removes narcosis, but with alcohol it is very mufarreh (exhilarant, euphoriant). Ibn Baytar says that according to Zakariya Al-Razi, the rose suppresses the Khumar (narcosis) and produces haijaan (restlessness) in coryza and sleep. According to Husain, the rose is harmful for those having tendency of nazla (catarrh or cold) and it exaggerates the catarrh. Therefore, the increased secretion and nasal congestion in the rats could also be the cause of obstruction in the airway passage, possibly resulting into a condition of hypoxia that could lead to sudden onset of
arousal as a reflex life-saving phenomenon. Although, it was also observed that after the righting reflex the test animals were not alert but they further slept down for a long time as much as the control animals were sleeping. But, as this explanation was not sufficient enough to elucidate the possible mechanism that was involved in the early arousal produced by the rose oil, we further searched latest theories to make clear understanding of the same. In connection with the arousal mechanism,⁵ has provided very useful information as described in the following sentences. Acetylcholine (ACh) cells in the Basal Forebrain (BF), just anterior to the hypothalamus, seems to be the final common pathway for activating the cortex⁷ by tonically depolarizing receptors on dendritic spines of rows of cortical pyramidal (projecting-out) cells in adjacent cortical columns. Since ACh projections are active during both REM and quiet wakefulness, perhaps the degree of REM activation is a get ready state. Then, hypothalamic histamine projections to both brainstem and basal forebrain acetylcholine nuclei may be necessary to further activate the ACh cells to the get set stage of quiet wakefulness. Norepinephrine and serotonin activation may be what allows a further degree of cortical arousal for the go! of active wakefulness.⁴ In posterior hypothalamus are the newly examined hypocretin (orexin) and histamine systems. The hypocretin system seems to be a toggle switch⁵ by which circadian mechanisms can directly activate the brainstem and basal forebrain arousal and motor systems – in addition to any sensory stimuli activation. The hypocretin (Hcrt) area projects densely to the SCN, helping to maintain the full circadian cycle. Lower Hcrt levels leads to lower amplitude of circadian cycles and thus to narcolepsy ³. In terms of waking arousal mechanisms, Hcrt projects to both brainstem and basal forebrain acetylcholine centers, likely leading to cortical arousal, during both waking and REM.⁶⁷ Hcrt also projects to the ILN neurons in the thalamus to modulate them.⁵ The Hcrt-2 neurons project to excite neighboring posterior-hypothalamic histamine (H) neurons. Histamine, in turn, projects to the thalamus, to brainstem and basal forebrain arousal centers and to much of the cerebral cortex.⁸ Histamine neurons are found to be basically quiet during both REM and SWS sleep, highest during active waking and fairly high during quiet waking. This implicates H for waking but not REM cortical arousal. And the arousal effect of histamine is heavily dependent on Hcrt. Very recent studies of Hcrt, histamine and norepinephrine (NE) show a very interesting interaction. In narcolepsy (when one is asleep plus paralyzed), histamine levels are quite low. But, during cataplexy (which combines the greatly reduced muscle tone – paralysis– found in REM and narcolepsy, with the awareness of events around one, found in wakefulness), H levels are at the same level as in quiet wakefulness – which catalepsy seems to be – but NE levels are very low and 5HT levels are pretty low. This suggests that histamine may be a crucial factor in waking arousal – and then NE, 5HT and DA – add to waking arousal the active component of active waking.³ Stimulating H centers leads to arousal and as we all know, antihistamine leads to drowsiness.

CONCLUSION

Results of this experiment indicates that essential oil of rose inhalation(Lakhlakha) is Dafe Khumar (anti narcosis ) in animal experiment with albino rats. The rose enhances the quwa (faculties) and arwah (vital spirits).

REFERENCES


If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos.

Edward O. Wilson