Efficacy of olfaction vs oral route of administration in acute diseases: Pilot study

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Abstract
Through the ages, the oral route is most preferred route for administration of medicine. There are cases where olfaction is necessary such as in children, coma patients and was well recognized by Hahnemann and advised patients to smell in many conditions [10]. Drug administered by this route generally work quickly [2]. The olfactory experience is subjective and the olfactory nerves are special [3-4].

1. Introduction
Commonest route of administration is oral. Though, clinically there are cases of olfaction being effective. Olfaction is preferred only in epilepsy, coma and children who refused to take medicines orally (spits out) and also an excellent mode while the child is asleep [6, 7]. Odor stimuli are incredibly dynamic [8]. In recent years, evidence has begun to show the importance of olfaction and the predictive results [9, 10].

Olfactory receptors (OR) genes discovered by Buck and Axel in 1999, constitute the largest gene family in the human genome with 418 intact and potentially functional genes. These genes are classified into 18 families, each family having >40% sequence identity. Based on the evolutionary data OR sequences are separated into two classes, class I and class II. Class I receptors resemble the family initially found in aquatic animals, thus it was suggested that these receptors may be specialized in detecting the water-soluble odorants [11]. Olfactory receptors react to odorant molecules in the same way that most sensory receptors react to their specific stimuli [12].

Hahnemann have mentioned in 6th edition of Organon of Medicine (§ 288) and in the Materia Medica Pura about the effectiveness of olfaction. The action of aconitum in olfaction is mentioned in Hahnemann’s materia medica pura [11, 13, 14, 15]. Samuel Hahnemann described incidences where the homeopathic response was disrupted by noxious smells in the environment. Homeopathic response are given as examples, showing that successful re-establishment of remedy action can be produced by timely repetition of the medicine. The results on clinical homeopathic practice are discussed [16].

According to various data available, the ingestion takes about 30-90 minutes to cause the action, whereas inhalation acts in 2-3 minutes. Hence, as per this data, administration of the remedy through inhalation is more in action compared to ingestion of the same remedy [18]. Hence this pilot study was designed to understand and evaluate the rapidity of action [19] of the remedy in comparison between these two routes.

2. Materials and Methods
Ethical committee clearance was obtained from institutional ethical committee, prior to the start of study.
Selection of patients was based on inclusion and exclusion criteria of acute cases after obtaining informed consent form signed according to WHO format. The volunteers were randomly divided into 2 groups:

Group A- olfactory route.
Group B- oral route.

Negative group was not considered with regard to welfare of patients. Each group had a minimum of 15 patients after matching. Drug was administered orally in oral administration group and olfaction in olfactory group of administration. Repetition was done according to the need of patient and potency of remedy was based on totality of symptoms and susceptibility. Time taken for action of medicine and importance of condition was taken into consideration and recorded for matching. The data obtained was analyzed statistically by unpaired t test.

Inclusion criteria
- Acute illness

Exclusion criteria
- Patients on other medications
- Geriatric cases

3. Results and Discussion
3.1 Observations

Table 1: Duration taken to record significant prognosis in a case

<table>
<thead>
<tr>
<th>S. No</th>
<th>Diagnosis</th>
<th>Oral route (group b)</th>
<th>Olfactory route (group a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remedy Given(Rx)</td>
<td>Action Time (Min)</td>
<td>Remedy Given(Rx)</td>
</tr>
<tr>
<td>1</td>
<td>Tonsillitis</td>
<td>Kali bich 200</td>
<td>2880</td>
</tr>
<tr>
<td>2</td>
<td>Headache</td>
<td>Nat mur 200</td>
<td>45</td>
</tr>
<tr>
<td>3</td>
<td>Helminthiasis</td>
<td>Cina 200</td>
<td>1440</td>
</tr>
<tr>
<td>4</td>
<td>Headache</td>
<td>Sangunaria 200</td>
<td>2880</td>
</tr>
<tr>
<td>5</td>
<td>Tonsillitis</td>
<td>Ferrum phos 6x</td>
<td>180</td>
</tr>
<tr>
<td>6</td>
<td>Dysmenorrhrea</td>
<td>Chamomilla 200</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Dysmenorrhrea</td>
<td>Mag phos 200</td>
<td>120</td>
</tr>
<tr>
<td>8</td>
<td>Gastritis</td>
<td>Carbo veg 200</td>
<td>20</td>
</tr>
<tr>
<td>9</td>
<td>Fever</td>
<td>Belladonna 200</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>Lumbago</td>
<td>Kali carb 200</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>Fever</td>
<td>Belladonna 200</td>
<td>360</td>
</tr>
<tr>
<td>12</td>
<td>Fever with headache</td>
<td>Gelsemium 200</td>
<td>1440</td>
</tr>
<tr>
<td>13</td>
<td>Aphthous ulcer</td>
<td>Borax 200</td>
<td>90</td>
</tr>
<tr>
<td>14</td>
<td>Functional dyspepsia</td>
<td>Nux vomica 200</td>
<td>30</td>
</tr>
<tr>
<td>15</td>
<td>Toothache</td>
<td>Ferrum phos 200</td>
<td>120</td>
</tr>
</tbody>
</table>

3.2 Statistical analysis
The study was initially conducted with the participants of 30, each group of 15. An independent sample t test was conducted to compare and understand the efficacy of olfactory group and oral route of administration. There was a significant difference in the total for olfactory group (Mean=18.53, Standard deviation=45.9) and oral group (Mean=64.5, Standard deviation=1024.69) respectively.

\[ t-value = 2.36555, \ p-value = 0.012581 \]

In the cases of olfactory group improvement was observed in a range of 2 minutes -180 minutes and oral group showed improvement in 10 minutes - 2880 minutes. Thus, the results presented with skewness, but \( p \) value indicates that the study is statistically significant proving the alternating hypothesis.

4. Conclusion
As the existing literature suggests olfactory group works in 2-3 minutes, our homoeopathic medicines also exhibit significant improvement faster \cite{20} the medicines can be administered through the nose by olfaction as mentioned by Hahnemann \cite{21} So, the study provides an understanding and observation that patients with altered sensorium responded faster in olfactory route of administration than in oral group. Hence, olfaction is also equally effective and as of oral route used, this can be considered in route of administration in acute diseases.

5. Acknowledgement
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6. References
7. Nothing by Mou‘th’. Olfaction, Friction, and other Non-


