

## Original Research

### Comparison between Neocone and Zinc Oxide Eugenol for Treatment of Dry Socket

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#### ABSTRACT:

**Back ground:** Dry socket is one of the most common complication faced following permanent tooth extraction, more commonly seen in mandibular third molar. Zinc oxide eugenol and Alveogyl<sup>TM</sup> are used in treatment of dry socket while some prefer Neocone. **Aim:** To study the effectiveness of Neocone and Zinc oxide eugenol for treatment of dry socket. **Method:** Patients diagnosed with dry socket were randomly allocated to two groups namely Group A - ZOE, Group B - Neocone. Pain score was evaluated and recorded at the time of diagnosis, thirty and sixty minutes after placement of medication and on second, fifth, seventh and tenth day. The medication was changed every day until there was no pain. **Result:** in present study 5<sup>th</sup> day, 7<sup>th</sup> and 10<sup>th</sup> day Vas score for control group when compared with study group result showed that pain score was significantly better in Neocone group than in ZOE group. **Conclusion:** Neocone can be used for treatment of dry socket, however further studies are warranted.

**Keywords:** Dry socket, ZOE, Neocone, pain, irrigation

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#### Introduction:

Dry socket also known as Alveolar osteitis is one of the most common dental complication faced by clinicians as well as patients especially after extraction of Mandibular third molars.<sup>1,2</sup> The term "dry socket" was first described by Crawford in the year 1896.<sup>3</sup> According to the data available the incidence of dry socket is found to be in between 0.5 – 5.5% for routine dental extraction and it has been reported that it can rise up to 38% in case of surgical extraction of impacted Mandibular third molars.<sup>4</sup> Exact etiology of dry socket is not clear however most of the authors believe it is multifactorial which includes general factors such as

age, sex, decreased body resistance due to systemic disease, nutritional deficiency, etc., and local factors such as anatomical location, traumatic surgery, smoking, fibrinolysis of clot, local circulation.<sup>5,6</sup>

Characteristic features of dry socket includes severe, radiating pain in and around extraction socket which usually starts on 3rd post-extraction day along with halitosis; socket is devoid of organized blood clot and is filled with debris and the underlying bone is exposed.<sup>7</sup> The management of dry socket is as controversial. Primary aim in treatment of dry socket should be pain control followed by wound healing. Various dressing materials have been used in

management of dry socket like zinc oxide eugenol (ZOE) and Alveogyl, some preferring Alveogyl over ZOE.<sup>8,9</sup> Faizal et al. in 2015 compared the efficacy of Alveogyl, ZOE and Neocone in treatment of dry socket. They found that healing of extraction socket was better in Neocone group followed by Alveogyl group.<sup>10</sup>

**Aim:** To study the effectiveness of Neocone and Zinc oxide eugenol for treatment of dry socket.

**Materials and methods:**

This randomized controlled clinical study was carried out in the Distict Early Intervention Centre, Nalanda Medical College & Hospital, Patna. Ethical committee approval was obtained from the Institutional Ethics Committee. A written informed consent was obtained from the patients. A total of 60 patients diagnosed with dry socket were enrolled and randomly allocated to study and the control group.

Group 1: n = 30 study group (ZOE)

Group 2: n = 30 control group (Neocone)

The socket was irrigated with warm sterile saline and betadine solution. Loose debris was removed, taking care to avoid dislodging any residual clot present in the socket. A gauze piece soaked with freshly prepared ZOE paste was placed in the extraction socket under aseptic precautions. In control group a single pellet of Neocone was placed inside the socket followed by the placement of a sterile gauze piece to cover the socket. The gauze was removed after 5 min. Pain score was evaluated and recorded at the time of diagnosis, thirty and sixty minutes after placement of medication and on second, fifth, seventh and tenth day. Healing was checked second, fifth and tenth day.

**Statistical Analysis:**

The values obtained during each session was assessed, tabulated and subjected to appropriate statistical analysis.

**Results:**

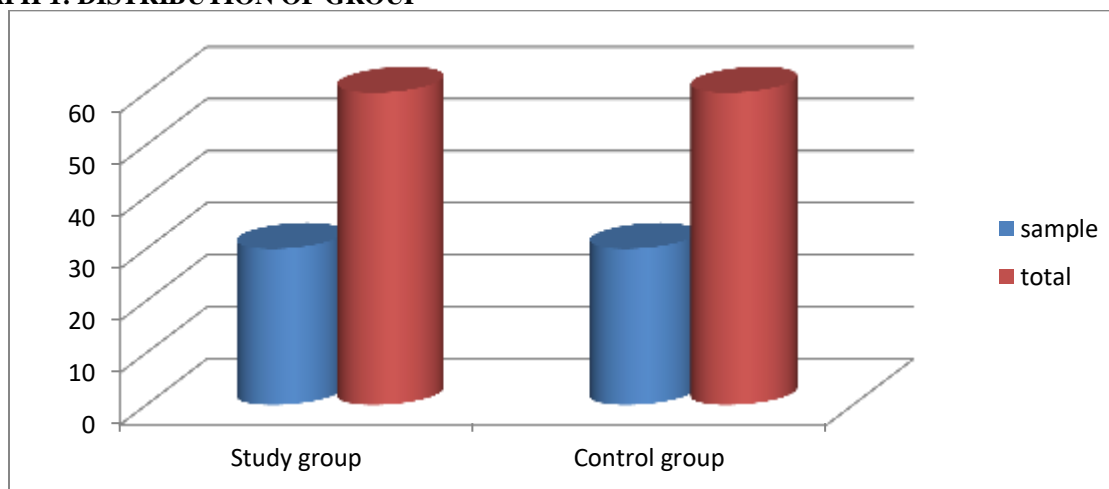
A total of 60 patients diagnosed with dry socket where included in the present study. Out of 60 patients 35 were females and 25 males (Table 1). All the patients were divided in two groups based on the mode of treatment. Group 1 consisted of 30 patients undergoing zinc oxide eugenol as dressing material for treatment of dry socket and group 2 consisted of 30 patients which were considered as our control group receiving Neocone as dressing material (Graph 1).

Vas score was observed for both the groups. Result showed that mean score at the time of diagnosis was  $7.62 \pm 1.22$  for Zoe and  $7.51 \pm 1.06$ . Vas score was observed 30 minutes after placement of dressing material and the result showed that P value at 30 minutes for control group i.e. neocone dressing material was found significant (0.001). 5<sup>th</sup> day, 7<sup>th</sup> and 10<sup>th</sup> day Vas score for control group when compared with study group result showed that pain score were significantly better in Neocone group than in ZOE group (table 2). Table 3 represents the healing pattern observed in both the groups in 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup> and 10<sup>th</sup> day after application of dressing materials. Of the 30 cases in study group empty socket was seen in 20 cases, exposed bone in 15 cases and redness in 15 cases and in control group empty socket was seen in 18 cases, exposed bone in 15 and redness around socket in 12 cases. In control group on 10<sup>th</sup> day not even single case of empty socket, exposed bone or redness was observed. Results in present study showed that healing property of Neocone group was better than Zoe group (Table 3).

**TABLE 1: GENDER DISTRIBUTION**

GENDER	SAMPLE	PERCENT %
MALE	25	41.67
FEMALE	35	58.33

**GRAPH 1: DISTRIBUTION OF GROUP**



**TABLE 2: VAS score of ZOE and Neocone group**

VAS Score	ZOE mean	Neocone mean
Day of diagnosis	7.62 ± 1.22	7.51 ± 1.06
30 minutes	5.63 ± 1.31	3.81 ± 0.65*
60 minutes	5.11 ± 1.06	4.74 ± 1.25
2 days	3.62 ± 0.97	2.84 ± 1.09
5 days	2.27 0.78	1.39 ± 0.86*
7 days	1.11 ± 0.63	0.52 ± 0.54*
10 days	0.28 ± 0.41	0.12 ± 0.31*

**TABLE 3: SIGN OF HEALING**

GROUPS	STUDY GROUP			CONTROL GROUP		
	Empty Socket	exposed bone	redness	Empty Socket	exposed bone	redness
At diagnosis	20	15	16	18	15	12
3 <sup>rd</sup> day	18	14	15	9	8	6
5 <sup>th</sup> day	14	10	12	5	3	3
7 <sup>th</sup> day	7	6	7	1	0	1
10 <sup>th</sup> day	3	2	0	0	0	0

**Discussion:**

Dry socket followed by extraction is one of the frequently encountered problems. Studies have shown that the incidence of dry socket after extraction of Mandibular third molar have been found to be higher in some studies.<sup>11</sup> According to the literature the incidence of dry socket to be higher in females than in males owing to use of OCPs in females which is in contrast to our study.<sup>12,13</sup> In current study 60 patients diagnosed with dry socket were included of which 35 were females and 25 males. So majority of the patients in present study were females.

In present study Vas score result showed that mean score at the time of diagnosis was 7.62 ± 1.22 for Zoe and 7.51 ± 1.06. Vas score was observed 30 minutes after placement of dressing material at 30 minutes for control group i.e. neocone dressing material was found significant (0.001). 5<sup>th</sup> day, 7<sup>th</sup> and 10<sup>th</sup> day Vas score for control group when compared with study group result showed that pain score were statistically significant in Neocone group than in ZOE group. Faizel et al in their study reported that Alvogyl is superior to the other two medications i.e. Neocone and Zoe for providing initial pain relief.<sup>10</sup> Neocone provides complete pain relief and the healing was fastest with Neocone. Author also stated that Neocone emerged as the most suitable dressing material for the management of dry socket in their study. Our study is in agreement with Faizel et al.<sup>10</sup> Davor Katanec also mentioned the use of Neocone® for the management of dry socket.<sup>14</sup> whereas other authors have suggested the use of zinc oxide eugenol.<sup>5,9</sup> Results in present study showed that

healing property of Neocone group was better than Zoe group. our result is in favour of those reported by Faizel et al.<sup>10</sup> other authors like Alexander and Bloomer suggested use of Alvogyl® for the management of dry socket.<sup>7,9</sup> In our study we found a statistically significant difference between two groups.

**Conclusion:**

Within the limits of our study we conclude that Neocone is a good dressing material and can be used as an alternative of zinc oxide eugenol in treatment of dry socket. Healing of wound and pain relief was found to be better in Neocone group. however further research with greater sample size is warranted.

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