Original article

Wound – biological basis of surgical treatment

Bishwas N C
Department of Surgery, Nepalgunj Medical College Teaching Hospital, Nepalgunj.
Correspondence address: Dr.Nirmal Chandra Bishwas**,** Department of Surgery, Nepalgunj Medical College Teaching Hospital, Nepalgunj.
Email : drmkidwai@yahoo.com

Abstract

Introduction: After having a through study along with available methods and medicines to treat external wounds, I came to conclusion that existing antiseptic solutions or antibiotic ointment to treat wounds is not sufficient and also costly. Biological basis of healing should be most crucial for wound healing. Central mechanism that control normal wounds healing is very important. Local wound's environment like moistures, temperature, and tension is also very important. So it was very important to get such a ointment which meets all these demands and should be easily available and can work without sterilization or without antibiotic.

Method: A long and difficult work was started. At last a ointment was created which was cheap and met the conditions which was put in research work. This ointment contains coconut oil, water, bhangra sindoor, ghee, carbolic acid, Aloe Vera, Placentrex, coral, Evion, Xantinol Nioctinate (Complamina). Complamina and trental was given orally also as it is a new combination of medicine, so any reference.

Results: Two groups were studied with different type of treatment. The first group containing 60 patients received routine treatment of wound with sterility maintained as well as antibiotic used. The other group consisting 150 patents was treated with the new ointment. To treat with the new ointment sterilized material was not needed as well as without giving any antibiotic.

Conclusion: Ointment gives the patients the feeling of calmness and removes stress, can work without antibiotic and sterilization. The whole treatment is cheaper with this ointment. This ointment will be useful for the people of the whole world.

Key Words: Wound, Biological Basis, mental stress, unsterility, Antibiotic.

Introduction

Nepal is on of the least developed country in the world. One third of land is covered by High Mountains, including the highest peak, Mount Everest. Ninety percent of total populations live in village with varied geographical terrain.

The doctor- population ratio is 1:21000. Most of the doctors are concentrated in the city. (Dr.Prasad, Pratap Narayan et all: surgery in Rural Nepal.) In Nepal people who live in mountains and far following area of Nepal can treat their external wounds without antibiotic and sterilized material.

In Nepal, people have living under extremely poor condition and difficult terrain. Their health condition is poor as it is difficult to reach to zonal hospital or medical college. They face their day to day life with various problems like money problem, journey problem to get in the hospital for surgery and operation. That is why it was brought into notice to have a through study along with available methods and medicines. I came to the conclusion that existing antiseptic solution or an antibiotic ointment to treat wounds is not sufficient. Antiseptic solution or ointment or antibiotic ointment available in the market is costly and does not cover the demand of body.

Surgeons get patients with wounds on a daily basis and the majority heals without complications. Clinical problem do arise and biological basis of healing was not appreciated by all clinicians, whereas it should be main point and most crucial for wound healing. When a tissue generation occurs, it is essentially fibroproliferative response. And clinical infection of wound healing exists in humans. At one end is

excessive healing with fibrosis and deposition of excessive scar tissue, like adhesions and kelloid scar. Recent advances in the management of other chronic and acute wounds have come from a greater understanding of central mechanism that control normal wound healing. Research has established the fivotal role of TGFâ. Connective tissue growth is faster. Those factors are involved in the deposition of extra cellular matrix after injury. With good surgical technique, we take care for closure or open treatment, having minimum inflammation. Agents have been identified, that can be applied at the tissue of injury to exist cellular inflammation and subsequent fibrosis. Reducing inflammations and growth factor activity may reduce scaring. Considerable research has gone into application of exogenous growth factor attends to stimulates healing. Exogenous growth factor, application is less impressive. The balance between MMP and their habit appears crucial in achieving successful healing. Site and age specific variation in healing are evident clinically. It is interesting that intraoral mucosal wounds much like fetal wounds exhibit privileged healing with rapid remodeling and minimal scar formation. Otherwise, this phenomenon is related in part to differing wound environment (moisture, temperature, tensions) between tissue sites, phenotypic and genotypic differences between all kinds of people.

The objectives of the study are following:

1. To make an ointment which is cheap and available every where.
2. The Ointment must provide coolness not only to wounds but to the whole body and mind.
3. The ointment should have strong regenerative power.
4. In remote areas, to find sterilized gauze is just impossible, so if proposed ointment is created, which can work in unspecialized condition.
5. If an ointment could be made without antiseptic and antibiotic or can work without antibiotic therapy. It was decided to continue the study about the proposed oint ment.

Method

This study was carried out in Bheri Zonal Hospital, Nepalgunj, and Medical College Hospital,Nepalgunj and in “Bishwas Clinic” for last 15 years. To do this ointment we need coconut oil, water, bhangra sindur, ghee, carbolic acid, Aloe Vera, placentrex and coral (the gum of sal tree), Evion, Xantinol Nicotinate (complamina) for this ointment. I used to give complamina and trental orally also.

This product is chosen according to the needs depending their properties which I mentioned above. I studied mainly two group of patient, Group A was treated by antiseptic dressing, (60 patients) with antibiotic therapy. Another group (100 patients) was treated by the new ointment. Sterilization was not mentioned. Antibiotic therapy was not given. At the same time I paid attention to the central role of Neuro humoral control and local condition of the wound. I studied age, sex, race, address, total count, neutrofil, blood sugar, Hb, cost of medicine, post operative day of complete healing. I continue to study the properties of ointment and found that this ointment was quiet good even to the patients having high blood sugar.

Results

The findings of the study have been grouped into two sections as per the groups that received regular treatment and that received this new treatment with new ointment. The first group received routine treatment that has been in practice fro treating the wound. There were 60 patients altogether in the group who received regular treatment of wound with sterility maintained as well as antibiotics used. The other group was treated only with the new ointment without maintaining sterile condition as well as without giving antibiotics. There were 150 patients in this group. The number of days required for healing varied in range as there were different kinds of wounds starting from small superficial wounds to deep wounds. The results of second group were found to be better than that of routine treatment group in terms of time required to heal and completeness of healing irrespective of the nature and extend of wound.

The information related to both the groups has been presented in separate section with regards to their general characteristics including age, sex, address, race etc and hematological as well as other related conditions. Group A consisted of patients who received regular routine treatment for wound and Group B consisted of the patients who received treatment with the new ointment. Furthermore, the important thing which was the main focus of the study, maintenance of sterility and administration of antibiotics was not followed in Group B whereas followed in Group A

Table 1: General Characteristics of the Patients

Address of the patients Group A			
	Frequency	**Percent**	**Cumulative Percent**
Banke	2	3.33	3.33
Bardia	18	30	33.33
Dang	10	16.66	50
Jumla	1	1.66	51.66
Kailali	18	360	81.66
Kapilvastu	2	3.33	85
Salyan	5	8.33	93.33
Surkhet	4	6.66	100
Total	**60**	**100**	

The above table describes the general characteristics of the group of patients that received routine treatment of wound in aseptic conditions with antibiotics as well as the other group who received treatment with the new ointment without maintaining sterility and without administering antibiotics. In Group A the majority of the patients were from age group 41 to 60 years that comprised nearly half (48.33%) of the patients in that group. The next largest group fell in the group 21 to 40 years which shows 45% of the patients in that. There were 42 male patients that is 70% and 18 female patients that is 30%. Similarly, majority (69%) of the patients were Pahadi Nepali.

On the other hand, group B had similar pattern in age distribution as the majority (around 75%) of patients fell in the group 41-60 years. The promotion of male participants was just double as that of female participants. There were 100 male patients out of 150 patients in total. In the racial distribution majority (around 64%) patients were Pahadi Nepali.

Table 2: Address of the patients Group A & B

Address of the patients Group A

	Frequency	**Percent**	**Cumulative Percent**
Banke	2	3.33	3.33
Bardia	18	30	33.33
Dang	10	16.66	50
Jumla	1	1.66	51.66
Kailali	18	360	81.66
Kapilvastu	2	3.33	85
Salyan	5	8.33	93.33
Surkhet	4	6.66	100
Total	60	100	

Address of the patients Group B

	Frequency	**Percent**	**Cumulative Percent**
Banke	14	9.3	9.33
Bardia	47	31.33	40.66
Dang	34	22.66	63.33
Jajarkot	3	2	65.33
Kailali	31	20.66	86
Rukum	3	2	88
Salyan	6	4	92
Surkhet	12	8	92
Total	**150**	**100**	

The patients were from different districts in total eight districts. Kailali and Bardia were two districts from where maximum number of patients received the treatment. There were 30% from these two districts. The next highest being Dang from where there were around 17% patients.

In group B the participants were from eight districts similar to group A, however not all the districts were same from where the patients came. Majority of the patients were from three districts Bardia,Dang and kapilvastu which in total comprised around 75% patients.

Hematological and Biochemical Findings.

In this there were three parameters measured in hematological parameter that is total WBC count and Neutrophil count hemolobin level. In the biochemical parameter only sugar level was measured.

Table 3: Hematological and Biochemical Findings Group A

Neutrophil percentage			
	Frequency	Percent	Cumulative Percent
55	3	5	5
58	2	3.33	8.33
60	18	30	38.33
65	24	40	78.33
68	10	16.66	95
70	3	5	100
Total	60	100	
Total WBC Count			
up to 8000	28	46.66	46.66
8000 -11000	28	46.66	93.33
11000 >	4	6.66	100
Total	60	100	

Blood Sugar Level in mg%			
	Frequency	Percent	Cumulative Percent
85	1	1.66	1.66
90	2	3.33	5
95	23	38.33	43.33
100	22	36.66	80
105	10	16.66	96.66
108	2	3.33	100
Total	60	100	
HB level in gm%		-	-
up to 10 gm%	21	35	35
more than 10% gm%	39	65	100
Total	60	100	

All the 60 patients had Neutrophil count within normal range. Majority of the patients had their Neutrophil count between 60 and 65% , which consisted of 70% in total. There were only 4 patients who had their total WBC count more that 11000 and in the remaining 56 patients half of them had total count less than 8000 and the rest had total count between 8000 to 11000. The hemoglobin levels of the patients however showed contrasting results as there were around 35% patients who had their hemoglobin level less than 10gm%. Similarly, in the biochemical parameters the only biochemical assessment done was blood sugar level. All ht patients had their blood sugar levels within normal range. In that also around 75% of patients had their blood sugar level between 95 and 100mg%.

Hematological and Biochemical Findings Group B

Total WBC Count			
	Frequency	Percent	Cumulative Percent
less than 8000	75	50	50
8000 to 11000	67	44.66	94.66
more than 1100	8	5.33	100
Total	150	100	
Neutrophil percentage			
	Frequency	Percent	Cumulative Percent
54	1	0.66	0.66
55	2	1.33	2
60	66	44	46
63	1	0.66	46.66
64	2	1.33	48
65	69	46	94
68	3	2	96
70	6	4	100
Total	150	100	

Hemoglobin level in gm%			
	Frequency	Percent	Cumulative Percent
less than 10	48	32	32
more than 10	102	68	100
Total	150	100	
Blood Sugar Level in gm%			
	Frequency	Percent	Cumulative Percent
up to 110	99	66	66
110 to 140	9	6	72
more than 140	42	28	100
Total	150	100	

In the hematological parameters, the total WBC count for around 45% (67) patients and total WBC count level between 8000 to 11000 whereas similar to group A this group also had only about 6% patients with total count more than 11000. While looking into Neutrophil count majority (around 86%) of the patients had Neutrophil percentage between 60 and 65. Just more than two third (68%) patients had their hemoglobin count in normal range that is more than 10mg%. In contrast to group A, this group had some of the patients with high blood sugar level. Around one third (28%) of patients had their blood sugar level more than normal limit of 140 mg%.

Other conditions in wound treatment

During the treatment of wounds there were certain other conditions that were of particular interest and were studied. These are sterility maintenance, antibiotic administration and cooling sensation as experienced by the patients.

Table 4: Other conditions in wound treatment

Other conditions in wound treatment group A		
	Frequency	Percent
Status of sterility maintenance		
Yes	60	100
Status of Antibiotic Administration		
Yes	60	100
Cooling sensation as experienced by the patients		
No	60	100

Other conditions in wound treatment group B		
	Frequency	Percent
Status of sterility maintenance		
Yes	150	100
Status of Antibiotic Administration		
Yes	150	100
Cooling sensation as experienced by the patients		
Yes	150	100

All the patients in group A received the treatment for wound under aseptic condition and by administering antibiotics. Apart from this another variable that was looked into in this study was cooling sensation as experienced by the patients. None of the patients in group A experienced the cooling sensation. Whereas, in the group B the patients were treated with the newly discovered ointment and they received treatment without maintaining sterile condition. Also they were not given any antibiotics. In contrary, all the patients experienced cooling sensation in the treatment.

Discussion

This new ointment is used in wounds, which are on the surface of the body. The patients feel cool in the wound, which is spreading on whole body, even to mind. Patients feel cool. On the process of study this ointment is showed that regenerative capacity of the ointment is far better then the antiseptic solution or antibiotic ointment available in the market of Nepal, India and whole world. During process of study, the ointment showed that the antibiotic therapy is not necessary. It was a great achievement. Further study of the ointment, showed that the sterilization is not necessary. It was another success. Inspired by success of the result, I continued to study the medicine and found this ointment can treat the patient who has moderate high blood sugar.

Conclusion

1. Patient has cool feeling in the wound which spread all over body and mind. Due to this the patient feels calm and quiet which result to remove the stress and giving cooling effect to the mind.
2. Ointment can treat the wounds without antibiotic, as we stimulate the body defense by medicine available in the market.
3. Wound of the patient can be treated in the condition of unsterility.
4. External wounds of a patient can be treated even if the patient has high blood sugar.
5. Biology of the body and wound with central control are more important then any other things else to treat a patient with external wounds.
6. This treatment is much cheaper then the treatment with antiseptic and antibiotic.
7. This study is very important not only for Nepal, but also for South-Asia and whole world.

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