

Ayapon to Control Bleeding Complications After Dental Extraction (A Controlled Study)

Y. C. Srivastava, BDS., MDS. (Oral Surgery) Dental Surgeon, Department of Dental Surgery, District Hospital, Bulandshahr 203 001, (U. P.)

INTRODUCTION

Extraction of tooth is a terminal event in the life of a tooth and it is associated with bleeding to a lesser or a greater extent. Sometimes the bleeding becomes uncontrollable and may lead to complications which may even endanger the life of the patient. Preventive measures are necessary not only as a measure of safety but failure to do so may lead to serious consequences. What may pass of as a routine, innoccuous and uneventful tooth extraction may take a dangerous turn necessitating hospitalisation of the patient. Hence it is imperative to take all precautions to avoid bleeding complications that may occur after extraction.

For this purpose, an Ayurvedic preparation `Ayapon' the main ingredient of which is Eupatorium Ayapana, a herb reputed to have potent haemostatic properties, was selected.

The properties of Ayapon are given as a safe and simple drug to control bleeding in bleeding gums, piles, epistaxis, haemoptysis, dysfuntional uterine bleeding and post -extraction bleeding in dentistry.

Pharmacological studies have shown that ayapana brings down clotting time from 210 seconds to 78 seconds in sixty minutes.

MATERIALS & METHODS

Patients that attended the Out patient Dental Department of the District Hospital, Bulandshahr, were taken up for the study (1979). These were consecutive admissions and as such are randomised.

Ayapon was given, 2 tabs. tds. one day before tooth extraction, and it was repeated on the day of extraction. The results of post-extraction bleeding were observed every five minutes for fifteen minutes and they were asked to report the next day also for examination of any bleeding complications. Post extraction check up consisted of evaluation of the degree of bleeding from the socket of the extracted tooth and systemic observation, for general management, if it became necessary. Patients were divided into Group A who received Ayapon tablets and Group B, who did not receive Ayapon tablets and served as Control group. Both the Groups received Terramycin capsules (250 mg) six-hourly for two days after dental extraction. There were 59 cases in Group A (Ayapon Group) and 29 cases in Group B, the Control Group.



The tooth was extracted under local anaesthesia of 2 e. c. of 2% xylocaine with adrenaline. The technique used for dental extraction was the forceps with the help of elevators. Surgical extraction by open flap method or bur tecnique was used for extraction of broken root stumps and in impacted III Molars. All cases were advised ice application over the extracted area for half an hour post -extraction. They were also advised to keep the cotton pack for fifteen minutes after extraction. Investigations of haemoglobin, Clotting time, Bleeding time and Prothrombin time were done in 10 cases of Group I (Ayapon Group) and 10 cases of Group B (Control Group). These investigations were done before the commencement of the trial and were repeated post extraction except Hb. The results were evaluated on the basis of post-extraction bleeding and observing for complications the same day and the next, and to be followed up if necessary.

COMPOSITION & PROPERTIES OF AYAPON

Ayapana (Eupatorium ayapana)	60 mg
Ashok Chhal (Saraca Indica)	60 mg
Nagkesar (Mesua ferrea)	30 mg
Godanti Bhasma (Hydrated	30 mg
Calcium Sulphate)	00 mg
Jeevanti (Leptadenia Reticulate)	90 mg
	0

(each tablet contains)

AGE GROUPS

The ages of the patients ranged from 11 years to 70 years. The maximum number of dental extractions were in the age group of 31-40 Years (34.1%). The age groups of 31-50 Years formed 56.8% of the total. (Table I).

CAUSES OF DENTAL EXTRACTION

The causes of dental extraction are classified as follows :

- 1. Carious lesion : There were 39 cases of carious tooth extraction. It was the largest group forming 44.3% of the total.
- 2. Periodontal Disease : This was the next cause of dental extraction with 33 cases (37.5%).
- 3. Impacted III Molar : There were 5 cases (5.7%) in this category.
- 4. Miscellaneous cases : There were 11 cases. (Table III).

Age Group	Group A (Ayapon Gr.)	Group B (Control)	Total	%
11-20 yrs	1	1	2	2.30%
21-30 yrs	9	6	15	17.10%
31-40 yrs	20	10	30	34.10%
41-50 yrs	12	8	20	22.70%
51-60 yrs	10	2	12	13.60%
61-70 yrs	7	2	9	10.20%
Total	59	29	88	100.00%

TABLE I – AGE GROUP



MALES & FEMALES

There were 48 males (54.5%) and 40 females (46.5%) among the total of 88 cases. (Table II)

Sex	Group A Ayapon	Group B Control	Total	%
Males	32	16	48	54.50%
Females	27	13	40	45.50%
Total	59	29	88	100%

TABLE II - Males and Females

TABLE III - Causes of Tooth Extraction

Causes	Group A Ayapon	Group B Control	Total	%
Cartious Tooth	26	13	39	44.30%
Periodontal Disease	23	10	33	37.50%
Impacted III Molar	3	2	5	5.70%
Miscellaneous	7	4	11	12.50%
Total	59	29	88	100.00%

DISTRIBUTION OF TOOTH LOSS IN CARIOUS TOOTH

Atleast 20% of cases of Carious tooth appeared for extraction only after the entire crown had been destroyed and only the root stump remained. Broken root stumps were extracted by open flap method or by bur technique. The maximum loss due to caries was in the age group of 31 to 40 years. Majority cases (46.2%) had caries of 1st molar. 2nd premonlar and 2nd molar were the next group affected forming 33.3% of the total cases. Canines were the least affected (5.1%). (Table IV)

		-	-	-
Tooth affected	Group A (Ayapon)	Group B (Control)	Total	%
1 st Molar	12	6	18	46.20%
2 nd Molar	5	2	7	17.90%
2 nd Premolar	4	2	6	15.40%
1 st premolar	2	1	3	7.70%
3 rd Molar	2	1	3	7.70%
Canine	1	1	2	5.10%
Total	26	13	39	100%

TABLE IV - Distribution of carious tooth extracted

DISTRIBUTION OF TOOTH LOSS IN PERIODONTAL DISEAES

This was the Second major cause of tooth mortality. Central incisors were the most common teeth affected (42.4%) Next came lateral incisors with 21.2% ,1st molar was the third affected with 12.1% (Table V)



Teeth affected	Group A	Group B	Total	%			
	Ayapon	Control					
Central incisors	11	3	14	42.40%			
Lateral incisors	5	2	7	21.20%			
1 st molar	3	1	4	12.10%			
1 st premolar	1	1	2	6.10%			
2 nd molar	1	1	2	6.10%			
2 nd premolar	1	1	2	6.10%			
Canine	1	1	2	6.10%			
Total	23	10	33	100%			

TABLE V - Distribution of teeth extracted affected by periodontal disease

DENTAL EXTRACTION OF IMPACTED TOOTH

All cases of impacted tooth were of 3rd molar. These were extracted by surgical extraction by open flap method or by bur technique of the total cases extracted five cases (5.7%) were of impacted 3rd molar.

MISCELLANEOUS

Il extractions (12.5%) were made under this group. Over retention was the major cause in this group. This group included cases of retained deciduous teeth, supernumerary tooth and extractions for surgical reasons including fractures, attrition and erosion and those that were surrounded by malignant tissues.

INVESTIGATIONS

Investigations of Haemoglobin, Clotting time, bleeding time and prothrombin time were done in ten cases in each group before the trial and were repeated after the trial, except Hb. Majority of cases had normal values before the trial except those that were anaemic (457,,J (Table VI).

REPEAT INVESTIGATIONS AFTER DENTAL EXTRACTION

Repeat investigations were done after dental extraction. By this time patient had received Ayapon 2 tabs tds before extraction and in the same dosage.on the day of extraction, in cases of Group A, Group B were kept as Control. Repeat investigation of Hb was not done, as it was thought unnecessary. The results showed that in the Ayapon Group some abnormal cases became normal, but in the control group, there was no change in values and it was the same as before the trial. (Table VII).

Investigation	Group A		Group B		Total		
	Ayapon		Ayapon				
	Normal	(Abnormal)	Normal	Abnormal	Normal	Abnormal	
(with normal range)							
Haemoglobin(12-16 grms/100ml)	5	5	6	4	11	9	
Clotting time (5 – 11 mts)	6	4	9	1	15	5	
Bleeding time(2-7 mts)	7	3	8	2	15	5	
Prothrombin time (12-14 seconds)	9	1	7	3	16	4	

TABLE VI - Before the trial : Group A & Group B : 10 cases each



TABLE VII Investigations after trial : 10 cases in each group

Investigation	Group A		Group B		Total	
(with normal range)	Normal	Ayapon (Abnormal)	Normal	Abnormal	Normal	Abnormal
Clotting time (5 – 11 mts)	9	1	9	1	18	2
Bleeding time(2-7 mts)	9	1	8	2	17	3
Prothrombin time (12-14 seconds)	10	0	7	3	17	3

DIFFERENCE IN ABNORMAL CASES BEFORE AND AFTER AYAPON THERAPY

Out of 4 abnormal cases of clotting time 3 cases showed normal values thus showing an improvement of 75% after Ayapon therapy. Out of 3 cases of Bleeding Time, 2 cases became normal, showing an improvement of 66.7%. 1 abnormal case of Prothrombin Time became normal after Ayapon therapy, showing 10% improvement. (Table VIII)

TABLE VIII :Improvement in Ayapon Group (Investigations)

Investigations	Abnormal before trial	Abnormal after trial	Difference	Improvement
Clotting time	4	1	3	75.00%
Bleeding time	3	1	2	66.70%
Prothrombin time	1	0	1	100.00%

DIFFERENCE IN ABNORMAL CASES BEFORE AND AFTER TRIAL : B-GROUP-CONTROL

In the Control Group the normal and abnormal cases were the same before and after trial, thus showing no improvement in the values of investigations done. (Table IX)

THE MEAN VALUES OF THE INVESTIGATIONS BEFORE AND AFTER THE TRIAL

In the Ayapon Group the mean clotting time before the trial was 6.5 mts., while it was 3.5 mts. after the trial showing a difference of 3 mts. The mean bleeding time in the Ayapon Group before the trial was 5.9 mts. while it was 3.4 mts. after the trial, showing a difference of 2.5 mts. The mean prothrombin time in the Ayapon Group, before the trial was 13 sec. while it was 12 sec. after the trial showing a difference of 1 sec. In the Control Group, the mean values of clotting time, Bleeding Time and Prothrombin time were the same before and after the trial. (Table X)

TABLE IX

Showing difference in the number of abnormal cases before and after trial

Investigation	Abnormal before trial	Abnormal after trial	Difference	Improvement
Clotting time	1	1	0	Nil
Bleeding time	2	2	0	Nil
Prothrombin time	3	3	0	Nil



TABLE X

Mean values of investigations before & after trial : Group A(Ayapon) and Group B(Control)

Investigation	Group	Α	Group B		
(with normal range)	Before trial	After trial	Before trial	After trial	
Clotting time (5 – 11 mts)	6.5 mts	3.5 mts	5.5 mts	5.5 mts	
Bleeding time(2-7 mts)	5.9 mts	3.4 mts	5.6 mts	5.6 mts	
Prothrombin time (12-14 seconds)	13 secs	12 secs	13 secs	13 secs	

TABLE XI : RESULTS

Result	Ayapon group	%	Control group	%
Excellent	59	100%	10	34.50%
Fair	-	-	10	34.50%
Poor	-	-	6	20.70%
Failure	-	-	3	10.30%

ASSESSMENT OF RELIEF FROM POST EXTRACTION HAEMORRHAGE AYAPON GROUP & CONTROL GROUP :

The results after extraction are assessed as follows:

EXCELLENT : When there was no bleeding episode at the time of extraction, and only pinpoint oozing was present for a few minutes.

FAIR : When there was oozing of blood from the socket for a few hours and then it stopped.

POOR : When there was moderate bleeding from the socket of the extracted tooth.

FAILURE: Severe bleeding from the extracted socket.

In the Ayapon Group, the results were Excellent in all the cases (100%). In the Control Group, Excellent results were in 10 cases (34.5%), Fair in 10 cases (34.5%), Poor in 6 cases (20.7%), and Failure in 3 cases (10.3%). (Table XI)

SUMMARY & CONCLUSIONS

A clinical trial was undertaken with Ayapon in 59 cases of dental extraction and 29 cases were taken as Control where no special drug was given. All the 88 case were given Terramycin capsules for two days after extraction. Post extraction results were evaluated on the degree of bleeding from the socket of the extracted tooth.

Ayapon was given a day prior to extraction and on the day of extraction, Control Group did not receive Ayapon or any similar drug. All the cases of Ayapon Group showed excellent results (100%) without any bleeding complications and there were no failures. In the Control Group, Excellent results were seen only in 34.5%, and it was Fair in 34.5%, Poor in 20.7% and Failure in 10.3%.



In the Ayapon Group, there was decrease in clotting time, bleeding time and Prothrombin time after Ayapon was given. In the control group, these values did not differ between before trial and after trial.

As bleeding complications sometimes become life-threatening use of Ayapon as a prophylactic measure a day before and on the day of dental extraction is very beneficial.

Use of Ayapon minimised bleeding time, coagulation time and prothrombin time. No side effects of any kind were seen with the use of Ayapon.

ACKNOWLEDGEMENT

I am thankful to the Superintendent, District Hospital, Bulandshahr, for giving facilities to conduct this trial and to my cases whose cooperation is necessary for successful trial.

My thanks to Alarsin Pharmaceuticals, Bombay, for the cooperation extended to me in conducting this trial.

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Alarsin House, A/32, Road No. 3, M.I.D.C., Andheri (E), Bombay-400 093.