

The Effect of Oral and Intramuscular Depot of Iodized oil in the Control of Endemic Goitre

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Introduction

The importance of iodized oil in the prevention of endemic goitre and endemic cretinism was first established in New Guinea in 1956-57¹. The intramuscular administration of the oil proved an effective means for the correction of iodine deficiency^{2,3}. Experience with oral iodized oil is not extensive. Growing interest has been shown in this decade on oral administration. Reports published are encouraging in terms of reducing goitre size after oral administration of iodized oil^{4,5,6}.

In view of the results reported in the region of endemic goitre on oral iodized oil, a programme was undertaken in the rural area of Sarsa, South-Western region of Bangladesh to ascertain whether iodized oil given orally and intramuscularly provides an equal effect in the reduction of goitre size.

Methods and Materials

A total of 313 persons, who fulfilled the criteria for selection in the study, were selected from amongst 320 people who attended the clinic. The criteria for selection were as follows: a) should have a visible goitre, b) not over 45 years of age, c) not pregnant and d) no recent history of taking iodine containing drugs. They were examined conventionally and graded according to WHO classification⁸. The subjects were divided into two experimental groups. Seventy one persons were given iodized oil intramuscularly and the other 242 persons orally. The ICCIDD (International Council for the Control of Iodine Deficiency

Disorders) recommended dose schedule was followed:

1 ml of iodized oil was given intramuscularly and 2 ml orally. The most widely used commercial preparation 'Lipiodol' was used.

A total of 190 out of 313 patients received oral or injectable iodine were followed-up after 1 year interval. Reduction of goitre size was considered clinically for evaluation of improvement and were classified into 3 groups: (i) 'Improved'- Reduction in goitre size with changes in grade; (ii) 'Not-improved'- Goitre size was static and (iii) 'Aggravated'- Further increase in goitre size with changes in grade.

Results

Table I presents an overall distribution of persons treated by grading. In both the group majority of the patients were in Grade II.

Table II shows the characteristic of the enlarged gland. 100% were 'diffuse' type in the 'injection group', while 25.21% in the 'oral group' show areas of nodular formation.

TABLE 1. & 2

About 40% of the population treated did not turn-up for their assessment during the follow-up visit.

A total of 41 goitrous persons treated with intramuscular iodized oil were compared with 149 persons treated with oral iodized oil. The overall clinical response in terms of

Table 1. *Distribution of population by grading*

Sex	Injection Group				Oral Group			
	Grade I	Grade II	Grade III	Total	Grade I	Grade II	Grade III	Total
Male	2	6	2	10	16	16	10	42
Female	14	39	8	61	51	112	37	200
Total	16	45	10	71	67	128	47	242
% of the total	22.54	63.38	14.08		27.69	52.89	19.42	

Table 2. *Glandular characteristic of 313 persons examined*

Sex	Injection Group			Oral Group		
	Diffuse	Nodular	Total	Diffuse	Nodular	Total
Male	10	0	10	33	9	42
Female	61	0	61	148	52	200
Total	71	0	71	181	61	242
% of the Total	100	0		74.79	25.21	

Table 3. *Patients response to iodized oil at 1 year follow-up*

Response	Injection Group				Oral Group			
	Male	Female	Total	% of the total	Male	Female	Total	% of the total
Improved	5	32	37	90.24	26	107	133	89.26
Not Improved	1	3	4	9.76	1	14	15	10.07
Aggravated	0	0	0	0	0	1	1	0.67

reduction in goitre size was 89.26% in 'oral group' and 90.24% in the 'injection group' (Table 3).

Palpitation was registered in one patient

receiving injection. Two patients in the oral group complained of pain and fever. Side-effects subsided in both the groups automatically within a few days.

Discussion

The result obtained in the present study showed that oral administration of iodized oil was as effective as intramuscular administration in reducing goitre size. M. Eltom et al found a similar result among the school children of Western Sudan⁴. This was further enlightened by the findings in Palca, Bolivia⁵. They showed on follow-up, iodized oil administered orally decreased goitre in 74% and intramuscularly in 77%. S. Duran Garcia reported a significant decrease in goitre prevalence among the school children receiving iodized oil orally in Western Andalusia, Spain⁷. Li Jianqun of China after his work on oral iodized oil recommends it as an alternative to injectable iodized oil⁹. Furthermore, oral administration is simpler, cheaper, safer in comparison to injection and does not require sterilization.

On the basis of the present study it may be concluded that oral administration of iodized oil proved equally effective in symptomatically reducing the size of goitre compared to that of the injection and suggest that oral administration is an attractive alternative that might replace intramuscular injection in the management of endemic goitre.

Summary

Iodized oil is a proved effective means for the control of endemic goitre. A comparative clinical study of iodized oil given orally and intramuscularly shows equal effectiveness in the treatment of endemic goitre in terms of reduction in goitre size. So, attention should be given to the use of oral iodized oil for the treatment and prophylaxis of endemic goitre among the population 'at-risk', where iodized salt supplementation is not possible.

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