

## INDUCING AGENTS FOR BRONCHOSCOPY. A COMPARATIVE EVALUATION OF PROPANIDID AND THIOPENTONE.

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### ABSTRACT:

In this study comparison of induction characteristics of Thiopentone and Propanidid in two groups of patients (25 each) scheduled for bronchoscopy was undertaken. The results show that Propanidid maintains better cardio-respiratory stability. There is earlier recovery and shorter anaesthetic period. Propanidid was therefore, found to be safer and more useful inducing agent than Thiopentone in bronchoscopy, more so in outdoor cases.

### INTRODUCTION:

The advent of jet ventilation greatly facilitated bronchoscopy under general anaesthesia. It was introduced into practice by Sanders when he used this technique to ventilate patients under general anaesthesia using Thiopentone and Suxamethonium. Spoerl advocated the use of this technique with slight modifications and introduced it in India in 1970<sup>1,2</sup>. Ideal anaesthetic technique must provide adequate ventilation and sufficient relaxation with quick smooth recovery from anaesthesia. Recovery is much quicker after Propanidid. Suxamethonium than after Thiopentone anaesthesia. Post anaesthetic period is also shorter and the patient does not need supervision by nursing staff<sup>3,4</sup>.

### MATERIALS AND METHODS

This study was undertaken on fifty patients undergoing bronchoscopy in the age group between 5 and 64 years (Table I). Indication for bronchoscopy has been shown in Table II. Patients were divided into two groups for the purpose of study, each group consisting of 25 patients. Group I patients received 2.5% Thiopentone (4-5 mg/Kg).

All these patients were operated and assessed postoperatively. Injection Atropine sulphate 0.6 mg (children 0.2-0.3 mg) was given intravenously prior to induction.

Vital signs of all the patients were checked before induction of anaesthesia. Suxamethonium (1-1.5 mg/Kg) was given intravenously. Soon after the injection of the induction agent the patient was ventilated with nitrous oxide, oxygen with mask till relaxation of jaw muscles was attained. Surgeon was allowed to pass the bronchoscope into the trachea.

An ordinary injection needle (16 FG) bent at right angle was inserted into the observer's end of the bronchoscope. The needle was connected to an oxygen cylinder with a reducing valve at an oxygen supply pressure of 50 PSI. Flow was interrupted with a simply local made valve<sup>5</sup>. Intermittent intravenous Suxamethonium was given as

and when required. Bronchoscope was taken out only when patient had started spontaneous respiration. Time taken for bronchoscopy varied from 15-20 minutes. Vital signs were monitored during operation and postoperative recovery noted.

## RESULTS:

The induction time as indicated by loss of eyelash reflex was 34-45 seconds with Thiopentone and 23-35 seconds with Propanidid. With Thiopentone there was a fall of blood pressure in 5 patients varying from 10-30 mm Hg of systolic pressure and rise in pulse rate of 8-10 beats per minute. No significant change in pulse rate and blood pressure was observed in Propanidid group. One patient developed skin rash around the site of injection without any significant change in vital functions.

Table I

Age in Years	Propanidid Group		Thiopentone Group	
	Male	Female	Male	Female
5-19	1	2	3	1
20-34	2	4	4	1
35-49	3	2	4	2
50-64	9	2	8	2
<b>Total</b>	<b>25</b>		<b>25</b>	

Table II

Indications	Propanidid Group (n)	Thiopentone Group (n)
Tubercular lesions	5	8
Ca. Lungs	7	6
Bronchiectasis	8	10
Miscellaneous (Hydatid cyst, Bronchopleural fistula)	5	1

Recovery was pleasant in both groups. Patients given Propanidid became fully conscious and were able to walk unattended much earlier than those given Thiopentone.

Table III

Observation	Propanidid Group (n)	Thiopentone Group (n)
Induction time	25-35 Sec.	34-45 Sec.
Fall of BP	Nil	5 Cases
Rise of Pulse Rate	Nil	5 Cases
Skin Rash	1 Case	Nil

## DISCUSSION:

Various methods of anaesthesia have been advocated for bronchoscopy. Jaw relaxation and depression of cough reflex are two important requisites for bronchoscopy and can be fulfilled satisfactorily under safe and suitable anaesthesia. The use of jet ventilation during bronchoscopy has been shown to maintain  $P_{aCO_2}$  within normal limits<sup>5</sup>. It makes the procedure smooth and there has been no problem of sharing the airway with surgeon for anaesthetising the patient. Duration of bronchoscopy has not been a criterion.

Patients posted for bronchoscopy are very often poor risk cases for anaesthesia due to involvement of respiratory system and in our hospital in mostly done as an outdoor procedure. The use of Thiopentone in such cases may add to the risk. Propanidid appears a safer drug because of its cardiovascular stability and fast recovery. It has analgesic effect<sup>6,7</sup> as compared to Thiopentone that is anti-analgesic. Patients can safely be sent home without any problems. Sharing the metabolic pathway with Suxamethonium Propanidid is known to prolong the action of this muscle relaxant. This factor can be of advantage for bronchoscopy where the dose of Suxamethonium could be brought down reducing the chance of side effects due to this drug.

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