

Utilization of general anaesthetic services by dental patients at RIPAS Hospital, Brunei

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Abstract

In recent years, there has been an annual increase in the number of patients seeking dental surgical procedures under general anaesthesia in our hospital. This may be due to the convenience of day care surgery which was introduced in 2001 primarily for the management of children.

The aim of this study was to examine the utilization patterns of general anaesthetic services by dental patients at our hospital to help plan future manpower and service needs. For the purpose of this study, children were classified as those up to the age of 16 years.

A retrospective study of accurately maintained operating theatre lists was analyzed for a period of 12 months from January to December 2005. A total of 192 patients were treated under general anaesthesia during this period. The majority were males (55.2%). Malays were 92.7% and Chinese were 4.2%. Patients below 35 years of age comprised 93.8% and almost 50% of the patients were children less than 16 years old. Thirty per cent of the patients were below 5 years of age. Of the children, one third of them were medically compromised and one fifth of them were with special needs. Of the children, 88.3% came in for extractions of multiple decayed teeth. The majority of adults were hospitalized for the surgical removal of impacted wisdom teeth (77.6%).

This study documents the profile of patients seeking dental treatment under general anaesthesia at RIPAS Hospital and highlights the demand for extraction of multiple caries teeth and surgical removal of impacted wisdom teeth in the local population.

Introduction

Dental diseases especially dental caries (tooth decay) and periodontal disease (gum disease) continue to be a burden in many developing countries with inadequate dental manpower and poor preventive oral health programs. Brunei Darussalam is no exception. Though Brunei has met almost all the target health indicators set by the World Health Organization (WHO) such as the infant mortality rate, maternal mortality ratio and life expectancy, we have

unfortunately not been able to achieve the oral health goals set by the WHO for the year 2000.

Bruneians are still battling the ravages of dental caries which has been brought under control in many countries through effective programmes and strategies implemented over the past 20 to 30 years. Comparison of the oral health indicators with other countries in the region and several developed nations reveal that Brunei's oral health status is lagging far behind (Table 1).

Many Brunei children who are high-risk for dental caries require multiple extractions of unsalvageable teeth. Young adults who suffer from recurrent peri-coronal infections often require the removal of multiple wisdom teeth. Many of these patients are better managed under a general anaesthetic in order to render them orally fit.

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DECAYED, MISSING, FILLED TEETH (DMFT) for 12-year-olds

Country	Per capita income 2004 US\$ / rank*	YEAR**	DMFT**
Hong Kong	\$34,200.00 (9)	2001	0.8
Australia	\$30,700.00 (17)	2000	0.8
United Kingdom	\$29,600.00 (19)	2000/1	0.9
Japan	\$29,400.00 (21)	1999	2.4
Sweden	\$28,400.00 (26)	2002	1.1
Singapore	\$27,800.00 (29)	2002	1.0
Brunei (2003*)	\$23,600.00 (38)	1999	4.8
Malaysia	\$ 9,700.00 (83)	1997	1.6
Thailand	\$ 8,100.00 (93)	2000/1	1.6
Philippines	\$ 5,000.00 (129)	1998	4.6
Indonesia	\$ 3,500.00 (149)	1995	2.2

Source: The World factbook*
WHO databank**

In 2001, day care surgery was introduced primarily for the management of children under general anaesthesia (G.A.). Since then, there has been an annual increase in the number of patients seeking treatment under G.A.

The aim of this study was to examine the utilization patterns of general anaesthetic services by dental patients at our hospital to help plan future manpower and service needs.

Materials and Methods

A retrospective analysis of accurately maintained operating theatre lists was analyzed for a period of 12 months from January to December 2005. The data collected included the patient's name, registration number, age, sex, race and procedure undertaken. For the purpose

of this study, children were classified as those up to the age of 16 years.

Results

A total of 192 patients underwent procedures under G.A. during this period. The majority of them were males (55.2%) and there was an almost even distribution of children and adults. Of these 92.7% were Malays, 4.2% were Chinese, 1.5% of them were Caucasians and the remaining 1.5% comprised Dusuns, Nepalese and Indians (Table 2). Among the 94 children the majority were Malays (93.6%) followed by the Chinese (2.1%) (Table 3).

Table 2: Racial Distribution

Malays	178	92.7%
Chinese	8	4.2%
Caucasian	3	1.5%
Others*	3	1.5%

(*Dusun, Nepalese, Indian)

Table 3. Racial Distribution of Children

Malays	88	93.6%
Chinese	2	2.1%
Caucasian	1	1.1%
Others	3	3.2%

(*Dusun, Nepalese, Indian)

The age distribution ranged from 1+ years to 47 years. The majority, 93.8% of the patients were below 35 years of age. The majority of the patients (32.8%) were between the ages of 15 to 24. Only 1% of the studied sample was above 45 years of age (Table 4).

Almost 50% of the patients were children below 16 years. 30% of the patients were less than 5 years of age (Table 5)

Table 4. Age Distribution

0-4	44	22.9%
5-14	42	21.9%
15-24	63	32.8%
25-34	31	16.2%
35-44	10	5.2%
45-54	2	1.0%
>55	0	0%

Table 5: Age Distribution of Children and Adults

<5yrs	58 (30.0%)
0-16 yrs	94 (49.0%)
>16 yrs	98 (51.0%)

One third of the children were medically compromised and one fifth of them were children with special needs (Table 6).

Table 6. Medically Compromised Children (33%)

Autistic	5	Mute	1
Downs Syndrome	2	Pierre Robin Syndrome	1
Mentally retarded	4	Congenital Heart Disease	3
Slow learners	3	Diabetic	1
Cerebral Palsy	2	Asthmatic	5
Cleft Lip & Palate	2	G6PD Deficiency	2

88.3% of the children came in for multiple extractions of decayed teeth. Only 3.2% underwent restorative treatment under G.A.(Table 7). The majority of the adults (77.6%) were hospitalized for the surgical removal of impacted wisdom teeth and another 14.3% for extractions. (Table 8).

Table 7. Procedures in Children

Extractions	83
Surgical removal of unerupted teeth	3
Surgical removal of odontomes	2
Surgical removal of supernumeraries	1
Gingivectomy	1
Excision biopsy	1
Fissure sealing	1
Restorations	2

Table 8. Procedures in Adults

Surgical removal of wisdom teeth	77.6%
Extractions	14.3%
Others	8.1%

Discussion

The demand for the management of dental patients under general anaesthesia or sedation will always be present immaterial of whether a country is developed or not. Between the years 1963 and 1973, the number of general dental anaesthetics administered within the aegis of the National Health Service Dental Estimates Board of the United Kingdom fell by 18 per cent while the number of treatment courses rose by 54 per cent. A similar trend can be detected in the available figures for the School Dental Service where the number of general anaesthetics fell by 32 per cent between 1960 and 1970 and the attendances rose by 14 per cent [1]. The decline in G.A. for dental outpatients was related in part to the unsatisfactory remuneration available from the Department of Health and Social Security. During 1976, a reliable estimate of the number of general dental anaesthetics administered to outpatients in the public and private sectors in England and Wales was in the region of 1.5 million [2]. Chanpong *et al* recently reported a significant need and demand for sedation and G.A. in the Canadian adult population [3].

Our study reveals that there were more males than females seeking treatment under general anaesthesia. This may be due to poorer oral health amongst the males. Malays were the majority of the patients. This could be a reflection of the composition of the population or a reflection of their poor oral health status as well. It could also reflect on their higher acceptance of general anaesthesia compared to the Chinese population.

There was an almost equal demand for management under general anaesthesia from both children and adults. Surprisingly, there were no patients above 55 years of age. This may be due to less dental intervention required in the older cohorts as reflected in Table 4. A good majority of the sample were below 35 years (93.8%) reflecting the burden of disease in the younger age groups. Almost half of the patients were in fact below 16 years i.e. children. Amongst the children ($n=94$), those below 5 years took up 61.7% of the demand. This compares well with data from Scotland where it is reported that 99% of children under 5.5 years received a general dental anaesthetic [4].

One third of our children were medically compromised and up to one fifth were those with special needs. However, only 3 children received restorations under G.A. This was mainly due to the constraints of operating time and the lack of qualified pediatric dental personal to undertake such procedures. The majority of the children underwent extractions (88.3%). This also compares well with data from Scotland where 96% of the children undergoing dental general anaesthesia came in for extraction of caries teeth [4]. The majority of our adults presented for the surgical removal of wisdom teeth, probably because the majority of the patients were below 35 years and wisdom tooth problems are more common in younger adults.

In conclusion, this study documents the profile of patients seeking dental treatment under G.A. at RIPAS Hospital and highlights the demand for extraction of multiple caries teeth and the removal of impacted wisdom teeth in the local population.

The trend of increasing patient numbers seeking treatment under a general anaesthetic each year is a reflection of the growing acceptance of Day Care Surgery amongst Bruneians. Efforts must be made to expand and improve this modality of managing dental patients in the near future. Future reduction of general anaesthetic numbers will be dependant on decreasing the number of young children presenting with advanced caries in multiple teeth and improving the oral hygiene of young adults to prevent recurrent pericoronary infections with respect to third molar teeth through preventive measures.

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