

## A SURVEY OF POSTOPERATIVE NAUSEA AND VOMITING IN ENUGU, NIGERIA

BY

P.U.N. NZE

*Department of Anaesthesia University of Nigeria Teaching Hospital Enugu*

### SUMMARY

**Aim:** To determine the incidence of post operative nausea and vomiting (PONV) for different types of common surgical procedure in the University of Nigeria Teaching Hospital Enugu, and to analyse the predictive factors associated with PONV.

**Methods** A prospective interview-based survey on the incidence of post operative nausea and vomiting in 800 in-patients aged 10-80 years was conducted during a six-month period. Cases of nausea and vomiting were recorded for 24 hours postoperatively. To achieve a representative sample of everyday surgery, data were collected from 8 types of common surgical procedures in 4 different operating theatres and departments: general surgery, gynecology, ophthalmology and otolaryngology.

**Results:** In the recovery room, the incidence of nausea and vomiting was 15% and 5% respectively. Over the whole 24 hour period, these figures were 52% and 25%, respectively. The highest incidence of nausea and vomiting was observed in gynaecological patients. The most important predictive factors associated with an increased risk of nausea and vomiting were female gender, previous history of postoperative sickness, a longer duration of surgery and a history of motion sickness.

**Conclusion:** This survey has enhanced our awareness of postoperative nausea and vomiting and raised the possibility of recognizing patients at risk preoperatively.

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**Key Words:** *Post-operative, nausea, vomiting, survey.*

### Correspondence Address:

*Dr P.U.N.Nze*

*Department Of Anaesthesia*

*University Of Nigeria Teaching Hospital*

*Enugu*

*Accepted For Publication: 29<sup>th</sup> July 2005*

## INTRODUCTION:

Nausea and vomiting still persist as the most common complaints following anaesthesia and surgery. Many adults find post-operative nausea and vomiting even more distressing than post-operative pains.

The overall incidence of PONV in the recovery room is around 10% but ranges from 20% to 30% during the first 24 hours after surgery according to recent reports<sup>1-4</sup>. Despite the advances in modern anaesthetic practice and surgical techniques, there is still room for improvement in identifying the causative factors as well as in the prophylaxis and treatment of this problem.

The objective of this epidemiological survey was to get representative numerical estimates of the present incidence of PONV for different types of common surgical procedure in the University of Nigeria Teaching Hospital Enugu. The aim was also to analyse the predictive factors associated with these symptoms.

## METHODS:

The study was designed as a prospective survey of the incidence of postoperative nausea and vomiting. To achieve a representative sample of everyday surgery, data were collected from 8 types of common surgical procedures in four different operating theatres and departments: general surgery; gynaecology, ophthalmology and otolaryngology.

In-patients scheduled to undergo elective surgery from one of the 8 procedure types requiring general or regional anaesthesia and follow-up for the first two hours in the recovery room were enrolled in the study. Both genders with ASA (American Society of Anesthesiologists) physical status 1-3 were included, but pregnant patients and those

requiring treatment in the intensive care unit were not studied.

The study lasted from January to June 2001. During this period, all the patients who met the inclusion criteria and gave their informed consent entered the study. Anaesthetic staffs were instructed to use the premedication, anaesthetic technique and post anaesthetic care according to their usual practice.

The patients were interviewed in the recovery room and in the surgical wards. The assessment intervals were 0 — 2 hours and 2 — 24 hours.

All interviews were conducted by the author. During the interview, the patients were asked about the presence and intensity of nausea and vomiting.

Nausea was evaluated by the patient's subjective sensation of feeling sick or wishing to vomit. Nausea was assessed using an 11 — point rating scale (0 = no nausea; 10 = as bad nausea as possible).

Vomiting was recorded separately.

## RESULTS:

Interviews were completed in 800 patients, of whom 480 (60%) were females. The distribution of the in-patients within the 4 surgical departments and different procedures is shown in table 1

Table 2 presents demographic characteristics of the patients for different types of surgery and anaesthesia. The anaesthetic technique was general in 560 (70%) patients while regional anaesthesia was performed in 240 (30%) patients. Table 3 shows the percentage of patients with nausea, vomiting and administration of anti-emetic medication in different types of surgery. The overall incidences of

postoperative nausea and of vomiting in the total patient population were 52% and 25%, respectively. Postoperatively, anti-emetics were given to 31% of the patients.

During the first 2 hours after surgery, nausea was experienced by 18% of all the patients and 5% vomited. The highest incidence of nausea (27%) was reported in gynaecological patients of whom 21% were treated with anti-emetic medication (table 3).

During the second observation period from 2 to 24 hours postoperatively, the proportions of patients with nausea and vomiting in the whole population were 49% and 24%, respectively. Again the rates were highest in the gynaecological patients (nausea 60% and vomiting 31%)

Table 4 presents the distribution (%) of the severity of nausea as assessed by the patients in the ward (2 — 24 hours), by the type of surgery, anaesthetic technique and gender. Sixty percent of gynaecological patients had nausea while 51% of patients from otolaryngology had nausea.

Fifty —two percent of patients who had general anaesthesia had nausea compared with 38% of patients who had regional anaesthesia. The incidence of nausea in the ward was 32% for males and 57% for females.

## DISCUSSION:

This survey was designed to investigate the incidence of postoperative nausea and vomiting and to ascertain the degree of discomfort after everyday surgery with modern anaesthetic and surgical techniques. The results indicate that the occurrence of nausea and vomiting is still high, especially in the general ward. Although the incidence of nausea was high, the proportion of severe nausea was generally below 10%.

This study was conducted by personally interviewing all the subjects during the first postoperative day while still in hospital, thus reducing the risk of memory lapse found with subsequent self-completed questionnaires. The patients were questioned regarding their symptoms, mostly by the same investigator, in a consistent manner. Only a subjective scale, as perceived by the patient, can measure the intensity of nausea, and the same approach was chosen as with pain evaluation<sup>(5,6)</sup>.

These aspects in measurements might elicit the true proportion of patients with emetic symptoms and are in accordance with the study by Cohen et al.<sup>(3)</sup>. In interpreting our results some factors must be taken into consideration. The proportion of females was about twice that of males and men generally are less susceptible to nausea (1-4). The proportion of gynaecological patients contributed to the imbalance of gender distribution, as well as to the high overall rate of nausea. Nausea and vomiting in females was about twice as common as in males. Similar findings have been described recently (3, 4, and 7).

Seventy percent of our patients were operated upon under general anaesthesia, which is known to provoke more emetic reactions than regional anaesthesia (2, 4)

This may have increased the overall incidence of postoperative nausea and vomiting although the anaesthetic technique used was representative of current practice.

In this population, the incidence of nausea and vomiting after regional anaesthesia (mostly spinal) was greater than that reported by Carpenter et al<sup>(8)</sup>, but our sample size in this group was too small to exclude chance variation.

This survey has confirmed female gender, a history of previous postoperative emetic sequel and a history of motion sickness as

the most important patient — related risk factors for postoperative nausea and vomiting.

possibility of recognizing patients at risk for nausea during the preoperative evaluation.

The survey has also enhanced our awareness of postoperative sickness and raised the

**TABLE 1: NUMBER (%) OF DIFFERENT TYPES OF PROCEDURE BY GENDER**

Department	Procedure	Male N (%)	Female N (%)	Total N (%)
Gynaecology	Laparotomy	-	120 (25)	120 (15)
	Vaginal Surgery	-	80 (17)	80 (10)
Otolaryngology	Tonsillectomy	85 (27)	45 (9)	130 (16)
	Aural Surgery	15 (3)	15 (3)	30 (4)
Ophthalmology	Strabismus Surgery	70 (22)	80 (17)	150 (19)
	Cornea Surgery	25 (8)	60 (12.5)	85 (10.6)
General Surgery	Laparotomy	100 (31)	60 (12.5)	160 (20)
	Lower limb surgery	25 (7)	20 (4)	45 (5.5)
Total		320 (100)	480 (100)	800 (100)

**TABLE 2: DEMOGRAPHIC DATA OF THE PATIENTS FOR THE DIFFERENT TYPES OF SURGERY AND ANAESTHESIA**

	Types of surgery				Type of anaesthesia	
	GYN	OTO	OPHT	GEN	GA	RA
Characteristics	N = 200	N = 160	N = 235	N = 205	N = 560	N = 240
Age years (%)						
(Range) ≤ 14, %	-	26	15	-	5	-
15-34, %	26	36	20	18	23	19
35-49, %	47	22	21	30	34	27
50-64, %	18	12	22	29	24	25
≥ 65, %	9	4	22	23	14	29
Female, %	100	59	45	57	70	55
History of motion sickness, %	15	8	4	9	10	9
Nausea/vomiting % in previous GA	49	43	31	41	43	41
Nausea/vomiting % in previous RA	13	6	5	12	11	13
Duration of operation (min) average	80	35	83	73	75	64

GYN = Gynaecology, OTO = Otolaryngology,

OPHT = Ophthalmology, GEN= General surgery

GA= General anaesthesia, RA= Regional anaesthesia.

**TABLE 3****THE PERCENTAGE OF PATIENTS WITH NAUSEA, VOMITING AND ADMINISTRATION OF ANTI-EMETIC MEDICATION IN DIFFERENT TYPES OF SURGERY**

Outcome	Types of surgery				
	GYN	OTO	OPHT	GEN	Total
	N = 200	N = 160	N = 235	N = 205	N = 800
(1) 0 – 2h in the recovery room:					
nausea	27	15	11	16	18
vomiting	7	5	3	4	5
anti-emetics	21	13	9	13	14
(2) 2-24h in the ward					
nausea	60	51	36	46	49
vomiting	31	27	13	22	24
anti-emetics	37	9	11	21	23
(3) 0- 24h Overall					
nausea	65	53	38	49	52
vomiting	34	28	16	23	25
anti-emetics	48	19	18	28	31

GYN = Gynaecology, OTO= Otolaryngology

OPHT = Ophthalmology, GEN = General surgery

TABLE 4

THE DISTRIBUTION (%) OF THE SEVERITY OF NAUSEA AS ASSESSED BY THE PATIENTS IN THE WARD, BY THE-TYPE OF SURGERY, ANAESTHETIC TECHNIQUE AND GENDER

Nausea scores					
	None	Mild	Moderate	Severe	Total
Type of surgery					
Gynaecological (n = 200)	40	29	21	10	60
Otolaryngological (n = 160)	49	24	16	11	51
Ophthalmological (n = 235)	64	15	16	5	36
General surgical (n = 205)	54	23	16	7	46
Type of anaesthesia					
General (n = 560)	48	25	18	9	52
Regional (n = 240)	62	20	11	7	38
Gender					
Male (n = 320)	68	17	11	4	32
Female (n = 480)	43	27	20	10	57
Total (n = 800)	51	24	17	8	49

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