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on prednisolone (one of whom was also on indomethacin). Four of the patients were on multiple drug therapy.

All the patients knew the names of the analgesics and used them for pain relief only. However one patient who was on 1200mg daily acetylsalicylic acid was discovered to be anaemic with Packed Cell Volume (PCV) 30% and was diagnosed later to have a chronic duodenal ulcer.

The patients on steroids were on 20mg and 15mg twice-daily doses of prednisolone. The name of the drug was not known to them and they replenished stock with the used up container. Some of these patients did not readily give information on drug use. One particular patient who did not give such information had a turbulent intra and postoperative period. His case report is as follows:

O.B., a sixty-five year old obese man was scheduled for laparotomy for relief of intestinal obstruction of less than 24 hours duration. Preoperatively he was well hydrated, haemodynamically stable and denied any history of drug ingestion. The haemoglobin was 16gm/dl whilst serum electrolytes were Na+ 138 mmol/L, K^+ 4.1mmol/L, Cl^-102 mmol/L, $HCO3^-$ 23 mmol/L and serum urea was 24 mg%. Pethidine (75mg) had been administered intramuscularly about 3 hours preoperatively. (25mg) pethidine and atropine 0.6mg were administered intravenously prior to induction.

At induction the pulse was 76 beats per minute of regular and good volume and the blood pressure was 140/90. A rapid induction – intubation sequence was performed with 225mg I.V. thiopentone, suxamethonium 100mg, and a size 8.5mm cuffed endotracheal Portex tube was inserted. Anaesthesia was maintained with 66% nitrous oxide and 0.5% halothane in oxygen. Muscle relaxation was achieved with 6mg of pancuronium bromide and intermittent positive pressure ventilation of the lungs was instituted.

The halothane was discontinued about 15 minutes post-induction when the blood pressure fell to 80/50 and the heart rate increased to 128 per minute. Crystalloid fluids were administered with no improvement in the blood pressure. Other signs of hypersensitivity reaction to anaesthetic drugs such as urticarial rashes, or rhonchi were absent.

A perforation was found in the small intestine and it was thought that the patient was in septicaemic shock from peritonitis, hence 500mg of methyl prednisolone were administered. The blood pressure improved to 110/80mmHg. The perforation was closed and peritoneal toileting done. The residual effects of pancuronium were reversed with neostigmine and atropine. Despite adequate fluid balance and antibiotic therapy a gradual reduction in blood pressure was again observed in the postoperative period of methyl prednisolone (500mg) was prescribed on 6 hourly basis till a stable haemodynamic system was obtained.

He was re-operated on the second postoperative day, when he suffered severe melaena, the haemoglobin fell to 6gm/dl from 14gm/dl, and he went into shock. He was rapidly resuscitated and had general anaesthesia. At laparotomy no bleeding points were found at the site of anastomosis. He was transfused with 2 more units of blood and carefully monitored postoperatively.

On the third postoperative day he complained of knee pains and asked if he could take his drugs. It was then that he was discovered to be on prednisolone 20mg twice daily for the past two years for arthritis. The drug was recommended by his friend. He was also on other analgesics which he took irregularly. Methyl prednisolone was reduced over the following two days to 100mg 6 hourly daily and thereafter tailed off. He was operated on thrice more for wound dehiscence and incisional hernia.

Discussion

Anaesthesia in any patient can be hazardous. This is more so if the drug the patient is taking is unknown to the anaesthetist and the drug interacts with anaesthetic agents. Geriatric patients are particularly prone to polypharmacy because with aging some medical disease such as diabetes, hypertension, respiratory and renal diseases may co-exist in the same patient.

The most common drug used by the geriatric patients in this study was analgesics. Pain in the elderly may range from headaches, non-specific aches and pains, arthritis and psychosomatic diseases. Common analgesics used were acetylsalicylic acid, acetaminophen compounds, and indomethacin. Guttman [4] also found that the most common drug taken by the elderly was analgesics.

Acetylsalicylic acid is now recommended in 300mg daily dose as prophylactic against thrombosis [5] When ingested chronically in higher doses, the drug can cause gastric irritation, bleeding and anaemia as observed in one patient in this study. Acute acetylsalicylic acid intoxication due to inadvertent overdose can also lead to metabolic acidosis in the geriatric patient. The confusional state resulting from metabolic acidosis can cause difficulty in diagnosis in the perioperative period. As observed from the study, two of these patients were on steroids for the control of arthritic pain. Exogenous steroid ingestion can lead to suppression of the hypothalamo-pituitary-adrenal axis as probably happened in the particular case reported in this study. Such a patient when presenting for surgery becomes prone to complications. Inadvertent omission of the drug by the anaesthetist will occur once the patient fails to report such drug use as it happened in this case. This led to an Addisonian crisis and other surgical complications postoperatively. Geriatric patients often have memory impairment and may genuinely forget to offer the information about their medication. It is therefore imperative that the physicians and surgeons should enquire thoroughly into drug use from the patients and their relations whenever they present for medical care.

The other patient was on indomethacin in addition to steroid for control of arthritic pain. This drug combination ingestion without supervision and without awareness of the possible complications can lead to serious haemorrhagic problems, especially in the perioperative period when the stress of surgery is superimposed on the situation. In the study conducted by Alan and Dykes [6] analgesic use was implicated in 32% of upper gastro-intestinal bleeding episodes in the elderly, and mortality was higher than in the younger patient. Perhaps it is wise to give antacid routinely to elderly patients on such drugs. Some elderly patients sometimes unknowingly ingest abnormally large doses of haematinics, in the belief that it will make them stronger. These drugs could be beneficial in the elderly patients because they seldom eat well. Since these drugs are commonly available and are heavily advertised, some patients are on supposedly different types at the same time not realising that they contain the same active ingredients with resultant possibility of overdosage. No adverse effects have been reported with the use of vitamins B and C but overdosage with the fat-soluble vitamins can result in hepatic, renal and coagulation abnormalities [7] There was however no associated complication of vitamin-haematinic compound use in this study.

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Pattern of drug use in geriatric patients undergoing surgery under general anaesthesia

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Summary
Ninety-nine elderly patients aged between 65 and 84 years presenting for surgery have been studied as to their pattern of current drug use. Of these 47 (48%) were found to be on medication. Ten were on drugs prescribed by their physicians while 37 (37.5%) were on self-prescribed drugs. The self-prescribed drugs used were analgesics 23%, haematinics 8%, anti-inflammatory agents 6%, benzodiazepines 4%, steroids 2%, and oral hypoglycaemic agent 1%. Apart from the analgesics, patients did not know the names of the drugs they were taking. The dangers in the use of self-prescribed drugs in anaesthesia are highlighted and a plea is made for persistent effort to elicit information of drug use among the elderly presenting for general anaesthesia in order to avoid drug interactions.

Keywords: *Geriatrics, medication, general anaesthesia, drug interactions.*

Résumé
99 adultes ages entre 65 et 84 aus se presentant pour des interventions chirurgicals ont ete etudies a propos du plan courant de prise des medicaments. De ceux-ci, 47 (48%) etaient sous medication. 10 etaitant sous traitement prescris par leur medecins alors que 37 (37,5%) premaient des medicaments prescris par eux – meme. 23% de ces derniers etaient analgeriques, 8% haematiniques, 6% d'agents onti – inflammatoire, 4% de benzodiazepines, 2% de steroids et 1% d'agent hypoglycemique oral. A l'exception des analgesiques, les maladies ne connaissaient pas le nom des medicaments qu'ils prenaient. Les dangers de l'usage des medicaments prescris par soi-meme ou des tiers wn anasthesie sont soulignes et un appeal est fait pour un effort persistent pour elucider l'usage des medicaments cheq les adultes se presentant pour une anaesthsie generale dans le but d'eviter l'interactions des medicaments.

Introduction

Geriatric patients constitute about 2.8% of the surgical population at the University College Hospital, Ibadan (unpublished observation 1990). With improved healthcare delivery, education and enlightenment their population is expected to grow larger. There is a high surgical mortality associated with this age group and this is due to concurrent medical illnesses such as hypertension, chest diseases, diabetes mellitus and renal diseases which result from age-related decline of physiological functions of the various organs [1]. For the control of these illnesses, elderly patients often take more drugs than the younger patients [2]. In Nigeria where drugs can be purchased without a doctor's prescription, wrong drugs are often used for the illness or when the right drugs are purchased, precautions in the dosage and use of the drugs are not given or not followed. The easy accessibility to drugs allows old people to readily buy drugs for their various ailments without going to the doctor. These drugs may interact with anaesthetic agents [3] thereby exposing the patient to unnecessary risks and the anaesthetist to possible medicolega l suits. This study was therefore conducted to find out the pattern of drug use in geriatric patients coming for surgery under general anaesthesia and the hazards involved.

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Patients and methods

Ninety-nine consecutive geriatric patients who presented for elective surgical procedures were studied. Each patient was visited a day before surgery. Detailed history was taken regarding present and past illnesses and treatment. The patients were also asked what medications they were taking. When the names of the drugs were unknown, the patient was asked to produce the drugs for examination. The dose and the mode of procurement of drugs were obtained. Descriptive statistics was used in the analysis of the data.

Results

Fifty-four females and 45 males with age ranging from 65 to 84 years (mean age of 68.7 years) were studied. Forty-seven (48%) were on medications. Ten (21%) of these patients had their drugs prescribed by their physicians. Of these, four were on anti-hypertensive agents. Four were on an anti-inflammatory agent (indomethacin) and the remaining two were on oral hypoglycaemic agents (chlorpropamide and glibenclamide). Two of the hypertensive patients were also on diazepam (Table 1).

Table 1: Pattern of drugs used by Patients on prescribed drugs

Drugs	No of patients	% of patients on any medication
Antihypertensive	4	8.5
Antiinflammatory	4	8.5
Oral Hypoglycaemic	2	4.3
Total	10	21.3

** 2 of these patients were also on sedatives*

Table 2: Pattern of drugs used by Patientson self-prescribed drugs*

Drugs	No of patients	% of patients on any medication
Simple analgesics	23	48.9
Haematinics	8	17
Antiinflammatory	6	12.8
Sedatives	4	8.5
Steroids	2	4.3
Oral hypoglycaemic	1	2.1
Antipruritic	1	2.1

**Four of these patients were on multiple drug therapy.*

Table 2 shows that 37 other patients were on drugs not prescribed by a physician. Of these, 23 were on simple analgesics (acetylsalicylic acid and acetaminophen compounds), and six on indomethacin. In addition, 8 patients were on various brands of haematinics while 4 were on diazepam. One each on chlorpropamide and chlorpheniramine for pruritus and two were

Dement *et al* [8] found an increase in sleep-related problems with advancing age yet only four were discovered to be on night sedation in this study. Benzodiazepine sedatives are favoured now because of their wide therapeutic range, compared to barbiturate hypnotics. Nevertheless, diazepam is long acting especially in the elderly with depreciating hepatic function and daily use can result in cumulative effects. In the perioperative period, this can cause prolonged sedation or confusional state.

The brain utilizes mostly glucose for its metabolic functions and hypoglycaemia of short duration can cause irreversible brain damage. Vesely [9] has noted the surreptitious use of hypoglycaemic agents as one of the causes of hypoglycaemic coma in the elderly. One patient found in this study to be on chlorpropamide was not a diabetic. This drug abuse could have resulted in serious consequences if the anaesthetist had not successfully elicited the history. Even if the drug was omitted on the day of the surgery, its effects could have manifested intraoperatively due to its long duration of action.

In conclusion, some geriatric patients in this study were found to be on some self - prescribed drugs, which may complicate anaesthesia. The patients may be unwilling to confess to their use or they may simply forget. To avert serious drug interactions and perplexing complications during anaesthesia for the elderly at least two detailed and unhurried medical and drug histories should be taken. The interview should be unaccusative, suggestive, and understanding. The relations of forgetful patients should also be interviewed and if possible, all the medications should be brought to hospital for identification.

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