A MODIFICATION OF BOWEL PREPARATION PRIOR TO INTRAVENOUS UROGRAPHY

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ABSTRACT
One hundred (100) adult patients booked to have out patient intravenous urogram in the University of Calabar Teaching Hospital, Nigeria were allocated into one of two groups taking into cognizance their bowel habits.

Group 'A' patients had very sluggish bowel habit (opened bowel once in three or more days) while Group 'B' patients opened bowel at least once in 48 hours. Both groups received the same instructions for bowel preparation except for the laxative Dulcolax (Bisacodyl) which was excluded in Group 'B'.
The effectiveness of the bowel preparation in both groups was assessed by awarding scores to their "Control film". The result showed no significant difference in the degree of faecal shadowing between the groups. Meanwhile 35(70%) of patients in group 'A' experienced some inconveniences as side effects from the laxative. There was no reduction in the number of radiographs taken in either groups therefore the use of a laxative did not decrease radiation dose.

In conclusion, the routine use of a laxative for every patient booked for IVU is not justified, a modification of bowel preparation to suit bowel habit is therefore recommended.

ABSTRAIT
Cent (100) patients d'adulte ont réservé pour avoir hors de l'urogram intraveineux patient à l'université de Calabar enseignant l'hôpital, Le Nigéria ont été assignés dans un de deux groupes prenant dans la connaissance leurs habitudes d'entrailles.

Groupez le ` A les 'patients ont eu l'habitude très que lente d'entrailles (entrailles ouvertes une fois en trois jours ou plus) tandis que le groupe les patients de ` B 'ouvraient des entrailles au moins par le passé en 48 heures. Les deux groupes ont reçu les mêmes instructions pour la préparation d'entrailles excepté le Dulcolax laxatif (Bisacodyl) qui a été exclu dans le ` B de groupe '. L'efficacité de la préparation d'entrailles dans les deux groupes a été évaluée en attribuant des points à leur "film de commande".
Le résultat n'a montré aucune différence significative dans le degré d'ombrager fécal entre les groupes. En attendant 35(70%) de patients dans le ` A de groupe 'a éprouvé quelques dérangements en tant qu'effets secondaires du laxatif. Il n'y avait aucune réduction du nombre de radiographies prises dans l'un ou l'autre groupes donc que l'utilisation d'un laxatif n'a pas

diminué la dose de rayonnement.

En conclusion, l'utilisation courante d'un laxatif pour chaque patient réservé pour IVU n'est pas justifiée, une modification de préparation d'entrailles à l'habitude d'entrailles de costume est donc recommandée.

INTRODUCTION

Whether or not bowel preparation should be used before Intravenous Urography (IVU) remains a controversial issue[1]. Some studies have concluded that the routine administration of a bowel preparation is unlikely to improve the diagnostic quality of out-patient intravenous urogram[2] but many Radiology departments still continue with it and departmental practice varies[3]. George and Vinnicombe[1] concluded that purgation does reduce faecal residue but due to the increase in bowel gas there was no significant difference in renal tract visibility on the urograms between prepared and unprepared groups. This method can also be very unpleasant for the patient.

The aim of this study is to modify our standard bowel preparation prior to IVU such that urograms produced are of better diagnostic quality.

PATIENTS AND METHOD

100 patients, 18years and above booked to have outpatient Intravenous Urogram were allocated into one of two groups (A or B). Group A patients opened bowel once in three or more days. They received instructions for our standard bowel preparation of: two 5mg Dulcolax (Bisacodyl) tablets stat at night 48 hours before examination. Low residue e.g rice and pepper soup or stock diet for 24 hours, fasting and restricted fluid intake 6 hours prior to the procedure.

Group B patients opened bowel at least once in 48hrs. Instructions given were the same as for group A only the Dulcolax tablets were excluded. Patients were excluded from this study if they were not sure of their bowel habit, had colostomies, abdominal malignances, specific contraindications to laxatives or habitual enema or cathartic users. On the day of examination patients were questioned to ensure that instructions were properly followed and any unpleasant effects from the preparations were noted.

The radiologist supervising the I. V. U. was blinded from the preparation received by the patient. The control films were assessed independently by two radiologists who had no knowledge of the grouping. The effectiveness of the bowel preparation determined by the quantity of faecal residue visible was scored on a one to ten scale. A score of one indicated severe faecal loading and ten absolutely none.

RESULTS

The two patient groups contained similar age and sex distribution (Table 1.).
(Fig. 1) illustrates the distribution of scores awarded by each radiologist.
On comparing the mean scores given to each group (Table 2.) it shows that patients in group A who received the standard bowel preparation scored higher. However, when the highest mean score from group A
(6.14) and the lowest from Group B (5.94) are statistically compared by applying student's t-test; the difference does not quite achieve statistical significance at the 5% level.
All patients claimed to have carried out the preparation as described. In Group A where patients took the laxative Dulcolax, 26(52%) complained of abdominal cramps, 9(18%) of weakness while 15(30%) had no complaints.
In Group B, 9(18%) complained of hunger, 2(4%) of weakness while 39(78%) had no complaints.

DISCUSSION

The routine administration of a bowel preparation to patients undergoing out-patient intravenous urography (IVU) is still common despite recent studies questioning its value. Cochrane Shanks and Johnstone[4] as far back as 1950 had questioned its usefulness but a number of texts including recent ones still recommend bowel preparation. Bowel preparation has long been considered necessary in order to improve the diagnostic quality of the examination and varying doses of laxatives such as Senna tablets, Sodium picosulphate (Picolax, Nordic) were the most frequently used[2].

In this study, the laxative Dulcolax was administered to group A patients since it is expected that they would have a high faecal load in the colon when compared with group B who moved bowel more frequently. Although group A scored higher indicating less faecal residue, there was no significant difference in the faecal shadowing between the two groups. Habitual enema or cathartic users were excluded from this study. Bassey DE[5] noted that the use of herbal, water and soap enema (enema saponis) is habitual and indeed a ritual among the people of South-Eastern Nigeria particularly the Efiks, the indigenes of Calabar. This form of "medication" is aimed at cleaning out the gut and thereby improve bowel habit. Patients in this study moved bowel without any form of colonic stimulation.

Roberge-wade et al[6] had concluded that the administration of a laxative did not significantly improve the diagnostic quality of the urogram. Many hospitals routinely use purgative all in a bid to improve the visibility of the renal tract and to reduce the need for tomography with its higher radiation dose[3]. There was no reduction in the number of radiographs taken in either groups, therefore the use of a laxative did not decrease radiation dose and 70% of patients in group A experienced some inconvenience as side effects of the laxative.

In conclusion, bowel preparation is still necessary prior to an I.V.U. to reduce faecal residue but the routine use of a laxative cannot be justified, a modification in bowel preparation to suit patients' bowel habit is recommended.

Table 1
Age Range And Sex Distribution In Each Group

	Group A	Group B
Age Range (yrs)	18 – 80	18 – 76
Mean Age (yrs)	57.2	56.7
Males	34	31
Females	16	19
Total patients	50	50

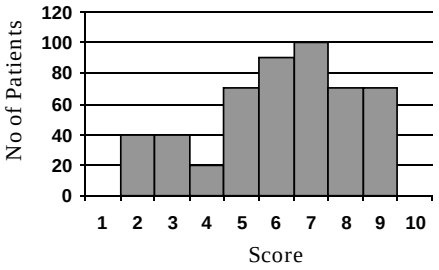
Table 2
Mean Score Awarded To Each Group

	RADIOLOGIST 1	RADIOLOGIST 2
Group A	6.12	6.14
Group B	5.58	5.94

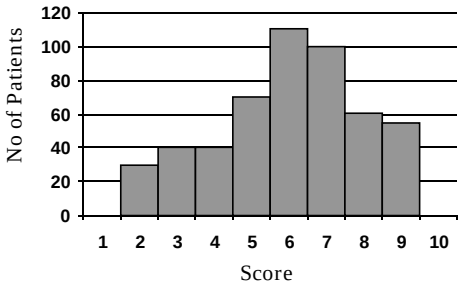
Fig 1Distribution of Scores Awarded by each Radiologist in each Group

GROUP A

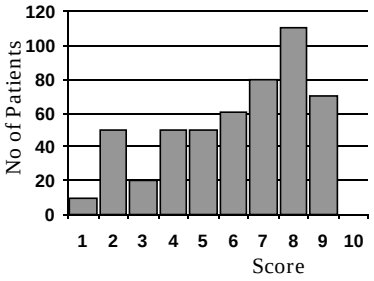
Radiologist 1



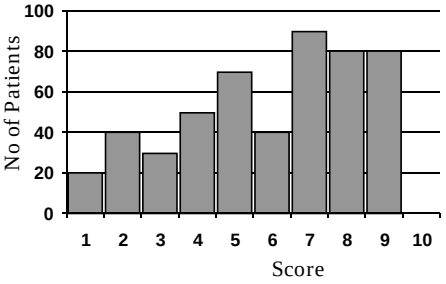
Radiologist 2



GROUP B
Radiologist 1



Radiologist 2



REFERENCE

1. George CD, Vinnicombe SJ, Bowel Preparation Before Intravenous Urography: Is it necessary? Br. J. Radiol 1993; 66(781): 17-9.

2. Bailey SR, Tyrrell PN, Hale M. A. A Trial To Assess The Effectiveness Of Bowel Preparation Prior to Intraveness Urography? Clin Radiol 1991; 44(5) 335-7.

3. Bradley AJ, Taylor PM. Does Bowel Preparation Improve The Quality of Intravenous Urography? Br. J. Radiol 1996; 69(826) : 906-9

4. Cochrane Shanks S and Johnstone AS (1950). A textbook of X-Ray Diagnosis, 2edn, Cochrane Shanks S & Kerley. P.p 105. H. K. Lewis, London.

5. Bassey DE. Radiological Observation in The Colon Of Nigerians with Enema Abuse. East Afr. Med. J. 1993 70(7), 452-4.

6. Roberge-wade AP, Hosking DW, MacEwen DH & Ramsey, EW. The Excretory Urogram Bowel Preparation is it necessary? Journal of Urology 1988, 140, 1473-74.