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Inflammatory Bowel Disease in Accra: What New Trends?

Maladie Inflammatoire Intestinale: quelles sont les nouvelles tendances?

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STRUCTURED ABSTRACT

BACKGROUND: **Inflammatory bowel disease (IBD) has been more common in Western Europe and North America. Initially IBD had been thought to be low in incidence among Sub-Saharan Africans. However, it is now being increasingly recognised in patients of African descent.**

OBJECTIVE: **A comparative assessment of the patterns of IBD in Accra from 1997 to 2011.**

METHODS: **This study used a retrospective design to access clinical details of follow-up patients attending the Gastroenterology Unit of the Korle-Bu Teaching Hospital, Accra between February, 1997 and May, 2011. It was a comparative seven-year review of clinical presentations of IBD between April, 2004 – August, 2011 *(t2)* and February, 1997 – March, 2004 *(t1)* for changing patterns of disease in tertiary care.**

RESULTS: **Twenty-eight (28) new IBD patients were seen in the Gastroenterology Clinic, KBTH with IBD during 2004 – 2011 (*t2*) in comparison to 17 patients over1997 – 2004 (*t1*). Presentations of severe diarrhoea were 70.4% and 55.6% in (*t1*) and (*t2*) respectively. Eighty-two percent (82%) of patients with IBD in (*t2*) had a severely inflamed colon on the index colonoscopy. Most patients (70–80%) responded to medical therapy (steroids, sulfasalazine) with no colon resections for steroid-refractory colitis.**

CONCLUSION: **Although relatively uncommon, IBD recorded a 65% rise in incidence over the study periods with a male preponderance. Most patients with IBD were presenting late with severe clinical and endoscopic features of disease yet medically responsive. Non-specific (indeterminate) colitis gained prominence in (*t2*). WAJM 2013; 32(1): 40–44.**

Keywords: **Inflammatory, bowel, trends, Accra, Ghana, Africans, non-specific colitis.**

RÉSUMÉ STRUCTURÉ

CONTEXTE: La maladie inflammatoire de l'intestin (MII) a été plus courante en Europe de l'ouest et en Amérique du Nord. Son incidence a été considérée comme étant basse chez les Africians au sud du Sahara. Toutefois, elle est à présent de plus en plus reconnue chez les originaires d'Afrique.

OBJECTIF: Une évaluation comparative des particularités de la MII à Accra de 1997 à 2011.

MÉTHODES: Une étude rétrospectivea évalué les données cliniques et du suivi des patients de l'unité de Gastroentérologie de l'Hôpital Universitaire de Korle Bu (HUKB), Accra entre Février 1997 et Mai 2011. Il s'agissait d'une revue comparative sur des périodes de 7 ans des aspects cliniques de MII entre les périodes Avril 2004 – Août 2011 *(t2)* et Février 1997 – Mars 2004 *(t1)* afin d'évaluer les changements d'aspect de la maladie dans une structure tertiaire.

RÉSULTATS: Vingt huit (28) nouveaux cas de MII ont été vus à la clinique de Gastroentérologie de l'HUKB dans la période 2004 – 2011 (*t2*) en comparaison des 17 cas dans la période 1997 – 2004 (*t1*). Un tableau de diarrhée sévére a été observé dans 70,4% et 55,6% respectivement en (*t1*) et (*t2*). Quatre vingt deux pour cent (82%) des patients avec une MII en (*t2*) avaient un colon sévèrement inflammatoire lors de la colonoscopie. La plus part des patients (70-80%) avaient une bonne réponse au traitement médical (stéroïdes, sulfasalazine) sans notion de résection pour les colites réfractaires aux stéroïdes.

CONCLUSION: Bien que relativement rare, la MII avait eu une augmentation de son incidence de 65% au cours de la période d'étude avec une prépondérence masculine. La plus part des patients se présentaient tardivement avec un tableau clinique sévère mais des aspects endoscopiques encore compatibles avec un traitement médical. La colite non-spécifique (indéterminée) était prédominante en (*t2*). **WAJM 2013; 32(1): 40–44.**

Mots Clés: Inflammatoire, intestin, tendances, Accra, Ghana, Africains, colite non spécifique.

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Abbreviations: CD, Crohns Disease; **IBD,** Inflammatory Bowel Disease; **KBTH,** Korle-Bu Teaching Hospital; **t1,** February, 1997 – March, 2004; **t2,** April, 2004 – August, 2011; **UC,** Ulcerative Colitis.

INTRODUCTION

Inflammatory bowel disease (IBD) is characterised by non-specific chronic relapsing inflammation of the gastro-intestinal tract and extra-intestinal manifestations of unknown aetiology and partly understood pathogenesis.[1,2] Current hypothesis indicate that the genesis of IBD may be polygenic and multi-factoral. The chronic inflammation may result from a dysfunctional gut immune system in response to a genetically determined failure to process certain commensal antigens.[3,4] Two sub-types are clinically recognized, ulcerative colitis (UC) and Crohn's disease (CD).[1] IBD has been more common in the highly developed countries of Northern/ Western Europe and North America, with a prevalence of 30 to 200/100,000 for UC, 1.2 to 106/100,000 for CD and an incidence of 0.5 to 24.5/100,000 UC and 0.1 to 16/100,000 CD.[5] Initially IBD had been thought to be low in incidence among Sub-Saharan Africans.[1,6] This was mainly because of the relatively sporadic cases reported from the continent in comparison to the larger numbers reported from North America and Western European countries.[7] However, it is now being increasingly recognised in patients of African descent.[6]

The community prevalence of IBD in Ghana is not known. Between 1997 and 2004, 17 cases of IBD were identified in the tertiary referral centre, Korle-Bu teaching Hospital, Accra.[8] Seventy-five percent of these cases were confirmed as ulcerative colitis.[8] In this cohort of cases, males were affected more than females with the majority of cases occurring before the age of 50 yrs.[8] Pyoderma gangrenosum was the main dermatological manifestation of IBD seen in Korle-Bu, Accra.[8] This has been reported in other studies in Sub-Saharan Africa.[9–11] It is felt that there is a significant population of patients with chronic diarrhoea diseases in the community, usually treated as bacterial or parasitic infections.[8]This contributes to a long delay in diagnosis and subsequent management.[8,12] This study will assess clinical presentations of IBD to compare cases between 2004–2011 and 1997–2004 for changing patterns of disease.

METHODS

This study used a retrospective design to access clinical details from case records of new and follow-up patients with confirmed IBD at the Gastro-enterology Unit of the Korle-Bu Teaching Hospital, Accra between 1997 and 2011.The Gastroenterology Unit runs a weekly afternoon Outpatient Clinic and sees approximately 60 patients each clinic session. The focus of the study was a comparative review of clinical presentations of IBD between April, 2004 – August, 2011 and February, 1997 – March, 2004 for changing patterns of disease and outcomes in the Gastroenterology Unit, KBTH,the main tertiary referral centre in Accra. The period (February, 1997 – March, 2004) and (April, 2004 – August, 2011) were referred to as (*t1*) and (*t2*) respectively. This study took place between Septemberand December, 2011. All authors complied with the requirements and principles of the Helsinki Declaration during this descriptive study. The exercise was undertaken with particular care to avoid patient identifiable information on the study instrument. The study survey was structured with specific questions to capture data on age, sex, duration of symptoms, initial stool frequency, stool consistency, stool appearance, colonic endoscopic examination, colonic histology and clinical outcome following therapeutic intervention. One-hundred and seventy-five (175) case files with gastroenterological conditions were reviewed, excluding liver related diseases. Comparative data were expressed as proportions and presented in table-format and figures.

RESULTS

Twenty-eight (28) new patients were seen in the Gastroenterology Clinic, KBTH with IBD during 2004 – 2011 (*t2*) in comparison to 17 patients over the 1997 – 2004 (*t1*) year-period. During (*t2*), Seventy-One percent (71%) were males while 28.6% were females. Table 1 illustrates the comparative ages of the study periods: the 20–30 year group being the most prominent over the study period.

During (*t2*), 50% of patients presented 1–5 years after their symptoms, however there was a reduction in patients with symptoms over 5 years in duration (21.4%); Figure 1.

Patients presenting with severe diarrhoea (more than 6 episodes of diarrhoea per day) were 70.6% and 57.1% in (*t1*) and (*t2*) respectively; Figure 2. Fewer patients were presenting with milder forms of diarrhoea (less than 4 episodes of diarrhoea per day) in both study periods; 11.8%, and 10.7% in (*t1*) and (*t2*) respectively. Majority, approximately 88% of patients presented with stool frequency over 4 times per day in both study periods with the appearance blood-stained in 85–95% of cases. Eighty-two percent 82% of patients with IBD in (*t2*) had a severely inflamed colon on the index lower GI endoscopy.

Treatment regimes for acute IBD flares varied between Prednisolone 20–40mg daily and/or sulfasalazine 1gm twice/three times daily. Excluding non-compliant and defaulting patients, 82% and 71% responded to prednisolone and sulfasalazine respectively. No operations were recorded for steroid-refractory colitis.

Eighty-nine-percent 89% of patients diagnosed during (*t2*) were alive following this period in relation to 71% at the end of (*t1*).

Table 2 demonstrates the different types of histologically-confirmed IBD in the study populations. Ulcerative colitis

Table 1: The Age Distribution of IBD Cases at the Korle-Bu Teaching Hospital (KBTH) over the Study Period (1997 – 2011)

Age-Group (yrs)	*t1* 1997 – 2004: n(%)	*t2* 2004 – 2011: n (%)
< 20 yrs	4 (23.5)	2 (7.1)
20 – 30	3 (17.6)	11 (39.3)
31 – 40	4 (23.5)	7 (25.0)
41 – 50	3 (17.6)	3 (10.7)
51 – 60	2 (11.8)	3 (10.7)
>60 yrs	1 (5.9)	2 (7.1)

Table 2: The Histological Distribution of IBD cases seen at the Korle-Bu Teaching Hospital (KBTH) over the Study Period (1997 – 2011)

Histologic Diagnosis	*t1*1997 – 2004: n (%)	*t2*2004 – 2011: n (%)
Ulcerative Colitis	12 (70.6)	12 (42.9)
Non-specific Chronic Colitis	1 (5.9)	14 (50.0)
Crohns Colitis	2 (11.8)	2 (7.1)
Unspecified	2 (11.8)	–

Table 3: The Extra-Intestinal Manifestations of IBD at the Korle-Bu Teaching Hospital (KBTH)

Extra-GI characteristics	*t1*1997 – 2004: n(%)	*t2*2004 – 2011: n(%)
Pyoderma gangrenosum	3 (17.6)	2 (7.1)
Arthralgia	1 (5.9)	6 (21.4)
Clubbing	–	2 (7.1)
Sacro-ilitis	–	2 (7.1)
Aphthous mouth ulcers	–	1 (3.6)
Conjunctivitis	–	1 (3.6)

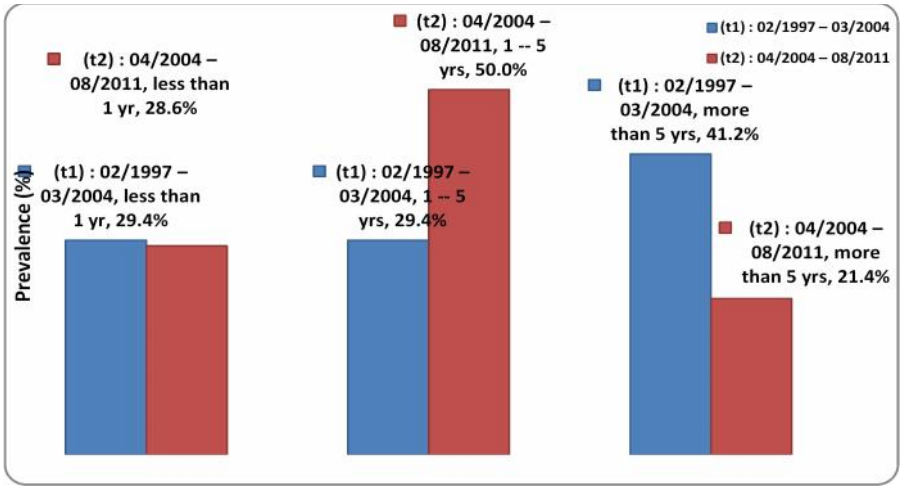

Figure 1: A Comparative View of IBD Symptom-duration at Presentation: *(t1) vs (t2)*

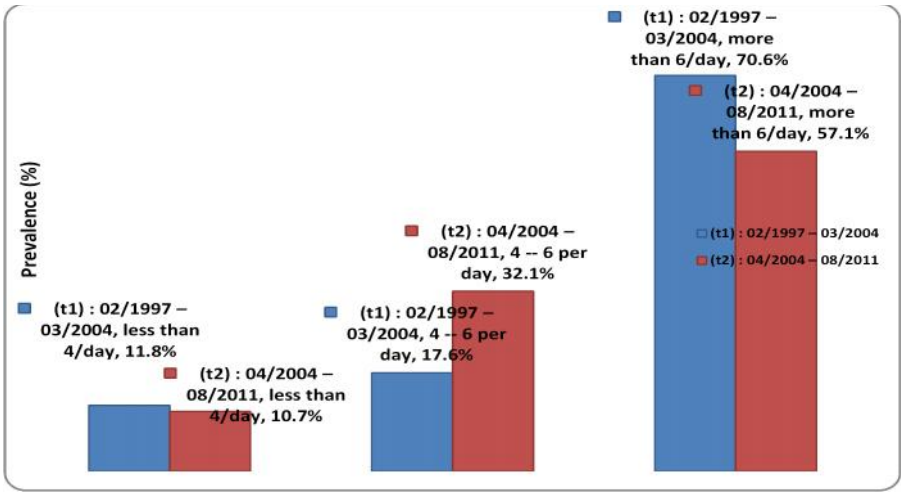

Figure 2: A Comparative View of IBD Stool frequency at Presentation: *(t1) vs (t2)*

was the commonest;however non-specific (indeterminate) chronic colitis was significantly more prevalent in (*t2*).

Table 3 shows the distribution of extra-gastrointestinal (GI) manifestations of IBD. In (*t1*), pyoderma gangrenosum, the main extra-GI feature occurred in 17.6%. (*t2*) had a diverse presentation of extra-GI features with clubbing 7%, conjunctivitis 3.6%, mouth-ulcers 3.6%, sacro-ilitis 7% and arthopathy 21%.

DISCUSSION

There has been a 65% increase in incidence of IBD during (*t2*) in comparison with (*t1*). This may imply an increased awareness of the condition. However reports suggest an increase in the incidence of IBD world-wide over the past two decades, but its spread has been slowing down in highly affected countries such as Western Europe and North America.[12,13] On the contrary, the traditionally low incidence areas such as Eastern Europe[14] and Asia[15] have seen a rapid increase in the incidence of IBD.[16] For instance Western Hungary saw its incidence rate rise from 1.66/100,000 (1977–1981) to 11.01/100,000 (1997-2001) in UC, and from 0.41 to 4.68 in CD, respectively.[17] It has also been suggested that there is likely to be a significant undiagnosed community burden of inflammatory bowel disease in Ghana; recognised cases representing a tip of the ice-berg.[8] There is however, limited information on time-trend related studies in Africa. The rise in incidence at the Tertiary Centre in Accra may be part of an increasing pattern in relatively low incidence areas suggesting an emerging common environmental factor responsible for its prominence. More males were affected in both study periods chronologically with the male: female ratios of 1.83 and 2.38 in (*t1*) and (*t2*) respectively. This pattern of male preponderance was also reported in relatively low incidence areas such as India[12] for Crohns Disease and Eastern Europe for UC.[14]

The age distribution Table, 1, showed a peak between age 20–30 years in (*t2*), 39.3%; this was different from the preceding (*t1*) period which had an even spread of cases over most year groups and without clear peaks. IBD

often exhibits a bi-modal peak of incidence, usually mid-adolescent-30 year group and then 50–60 year groups respectively.[13,18]

Most patients with IBD were presenting late with severe symptoms of diarrhoea and endoscopic colitis based on cases seen 1–5 years after symptom onset. This implies that the IBD patients' illness behaviour may not have changed significantly. Patients tolerate their symptoms, often trying various treatments including local herbal regimes prior to clinical consultations.[8] This pattern of severe delayed clinical presentation of IBD yet medical response to therapy and low surgical intervention has also been reported in Sudan[19] and a study involving Blacks in South Africa.[20] This may signify a peculiar clinical paradox in these traditionally low-incidence populations.

Non-specific (indeterminate) colitis was significantly more prevalent in (*t2*) compared with (*t1*). Some studies have reported definitive diagnoses of either CD or UC in 40–50% following serologic analysis, anti-neutrophil cytoplasmic antibodies (ANCA) or anti-*Saccharomyces cervisiae* anti-bodies,[21–23] however, serologic markers tend to have low sensitivity for IBD.[24] Patients have reportedly developed UC or CD over follow up[23] with approximately 80% ulcerative colitis.[23,25] Whether this cohort of IBD patients in Accra represents indeterminate colitis or a pre-ulcerative colitis stage will be determined by further longitudinal studies.

Extra-GI manifestations have evolved and broadened through the study periods to include clubbing, mouth ulcers, sacro-ilitis and arthralgia during (*t2*). The latter being the most prevalent during this period as reported in other studies.[26,27] Arthropathy was a manifestation in 21% of cases during this period, similar to data from other European centres (20–50% of IBD cases).[28–30]

This study location in Accra may reflect a different demographic population to the community however it suggests emerging trends given the significantly delayed presentations and stresses the importance of its awareness locally. This phenomenon provides a basis for further community and tertiary-based-investigation into the pathogenesis of IBD as it gains significance in Ghana.

CONFLICT OF INTEREST

None.

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