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5-Aminosalicylates and renal function monitoring in inflammatory bowel disease: A nationwide survey

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Abstract

Background and aim: 5-Aminosalicylates (ASA) are widely used in inflammatory bowel disease (IBD). Nephrotoxicity has been described in some IBD patients treated with 5-ASA. Whether physicians managing these patients are monitoring renal function in daily practice is unknown. The aims of this paper were to investigate how private gastroenterologists monitor renal function and manage renal failure in IBD patients treated with oral 5-ASA therapy.
Methods: This was a web-based cross sectional national survey which was conducted among private gastroenterologists.
Results: A total of 249 practitioners completed the survey. Eighty two percent (n=205) of responders declared that they always monitor renal function. The respondents monitored twice a year Glomerular Filtration Rate (eGFR) using Modification of Diet in Renal Disease (MDRD) [90% (n=225)] and Creatinine Clearance (CCr) using a 24-hour urine collection [51% (n=126)]. Blood electrolytes, 24-hour urinary protein rate and dipsticks are performed by 41%, 39% and 22% of practitioners, respectively. Before oral 5-ASA initiation, 59% (n=148) of respondents screen for renal failure. In case of elevated serum creatinine, a nephrologist's opinion is asked by 80% (n=200) of responders and by 76% (n=189) of respondents before treatment initiation.

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Conclusions: Most gastroenterologists are monitoring renal function once or twice a year in IBD patients on 5-ASA. Less than two thirds of them screen for renal failure before treatment initiation. MDRD is mainly used, but a wide range of parameters is evaluated.

1. Introduction

5-Aminosalicylic acid (5-ASA) is recommended for both induction and maintenance therapy in ulcerative colitis (UC) at a dose from 1 to 4 g per day.[1–5] Therefore, 5-ASA is widely used in UC and more than half of the patients' are receiving oral 5-ASA treatment in the era of biologics.[6,7] In a French referral center-based cohort, the probabilities of receiving oral mesalamine at 1 and 5 years from the time of UC diagnosis were 43.4% and 68.1%, respectively.[7] In Crohn's disease (CD), its efficacy remains controversial, but it is still used by some practitioners in this indication.[8]

Nephrotoxic lesions due to high doses of 5-ASA were first described in animal models.[9] Chronic renal failure was reported in human receiving sulfasalazine and salicylazosulfapyridine since the 1970s.[10–12] 5-ASA-related nephrotoxicity occurs particularly within the first 12 months, even if delayed presentations after several years have also been described.[13] Such side effects usually take the form of an indolent, severe, chronic, and progressive interstitial nephritis, but acute interstitial nephritis has also been described.[14–16] Management of renal falilure within 10 months permited to achieve restauration of renal function in 40% to 85% of cases, thus suggesting the importance of an early biological diagnosis.[15–17]

Patients with pre-existing renal impairment, concomitant potentially nephrotoxic drugs, or co-morbidities should benefit from a scheduled renal function monitoring during 5-ASA therapy.[13,18] European Crohn's and Colitis Organisation (ECCO) guidelines recommended serum creatinine and full blood count every 3–6 months in these patients.[18] However gastroenterologists' management of renal function during oral 5-ASA maintenance therapy in inflammatory bowel disease (IBD) patients in daily practice remains unknown.

We therefore performed a French national survey which aims at evaluating how private gastroenterologists monitor renal function and manage renal failure in IBD patients treated with oral 5-ASA therapy.

2. Materials and methods

2.1. Questionnaire

This was a web-based cross sectional national survey consisting of multiple-choice questions. The questionnaire was developed by the Nancy University Hospital Departments of Gastroenterology (LPB, CZ and VB) and Nephrology (LF) in close collaboration with a member (PF) of the French national association of private gastroenterologists, named CREGG (Club de Reflexion des cabinets et Groupes d'Hépato-Gastroentérologie). The questionnaire was developed based on available recommendations[1–5,17] and after an exhaustive review of the literature.

The main section of the survey asked physicians to describe their monitoring practice for IBD patients receiving oral 5-ASA treatment. Specifically, they were asked to describe the types and frequency of monitoring tests performed. Physicians were also asked to describe their management of renal dysfunction before and during oral 5-ASA therapy.

The survey entitled "Renal function monitoring in IBD patients treated with oral 5-ASA" addressed the following 11 questions:

1. Do you monitor renal function of patients treated with oral 5-ASA?
2. If you monitor renal function, which biological tests are you using?
3. How often do you monitor Glomerular Filtration Rate (eGFR) using Modification of Diet in Renal Disease (MDRD)?
4. How often do you monitor Creatinine Clearance (CCr) with collecting urine for 24 h?
5. How often do you monitor blood electrolytes?
6. How often do you monitor 24-hour urinary protein?
7. How often do you monitor dipstick?
8. Do you systematically evaluate renal function before starting oral 5-ASA treatment?
9. Which increase in the serum creatinine rate do you consider enough to cause treatment discontinuation?
10. Do you ask for a nephrologist's opinion in case of increased serum creatinine level during oral 5-ASA treatment?
11. Do you ask for a nephrologist's opinion before initiating oral 5-ASA treatment in patients with an abnormal renal function?

The survey was administered anonymously from March 2011 to July 2011. The questionnaire was available on the CREGG web-page. An email invitation to fill in the questionnaire was sent to all CREGG members with a second mailing to increase response rate.

2.2. Statistical analysis

The data were entered into a database (Microsoft Office Excel). Proportions were expressed as percentages.

3. Results

3.1. Response rate

Between March 2011 and July 2011, invitations to participate to the survey were addressed by e-mail to 1565 French private gastroenterologists who are all CREGG members and who are managing both IBD and non-IBD patients (patients with liver disease etc.). It is the reason why only physicians managing IBD patients were asked to respond to this survey. It is known that 600 private gastroenterologists are managing IBD patients in France.[18] A total of 249 practitioners responded to the survey and were included in the analysis. Hence, 41.5% of French