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Research

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Management of Inflammatory Bowel Diseases in Jehovah's Witness

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ABSTRACT

Background: Treatment of Inflammatory Bowel Disease (IBD) patients who are known to be Jehovah's Witness (JW) can be a unique challenge. JW accept most available medical treatments, but may not accept blood transfusions or blood products due to their religious beliefs. We looked at the experience of treating IBD in JW, their care during acute bleed and also the outcome.

Methods: A retrospective review was performed to identify patients treated for IBD known to be JW between the years 2005-2009 at two University of Pittsburgh Medical Center Hospitals. Demographic data, clinical presentation, treatment during hospitalizations and outpatient clinics were abstracted from the chart. All patients were confirmed to be having IBD either by colonoscopy or by documented evidence during clinical care. JW was confirmed by documentation in the chart. We took note of complications secondary to IBD, treatment measures during emergent conditions like acute bleed, bowel obstruction and also different treatment options used for long term management of IBD.

Results: Twenty two patients were identified in both the university (n=14) and community hospital (n=8). Out of them, 13 patients had ulcerative colitis and 9 had Crohn's disease. Caucasians comprised majority of the population (68%). Mean age was 51 years. Mean time interval between initial diagnosis and most recent follow-up was 14 years. Among study subjects, 68% had documented colonoscopy reports with 6 patients (27%) showing active disease. Nine (41%) of these patients were post surgical and 6(27%) patients developed complication (clostridium difficile, abscess, fistula, colon cancer and small bowel obstruction) secondary to their IBD. Seventeen (77%) IBD patients were treated as an outpatient and 5(23%) as an inpatient. Three (14%) patients had to be admitted to Intensive Care Unit (ICU) during their inpatient stay. Hemoglobin was more than 10 g/dl in 68%, between 7 to 10 g/dl in 18% and less than 7 g/dl in 14% at baseline. After treatment with conservative measures for anemia, hemoglobin improved to more than 10 g/dl in 91%, and between 7 to 10 g/dl in 9%. One patient died with organ failure secondary to sepsis. Two patients (9%) underwent bloodless surgery with cell saver technique with no mortality.

Conclusion: Management of IBD related anemia in JW has a good outcome and can be treated conservatively without blood transfusion. Complications secondary to IBD does not adversely affect the outcome.

KEYWORDS: Inflammatory bowel disease; Jehovah's Witness; Blood transfusion; Bowel obstruction.

ABBREVIATIONS: IBD: Inflammatory Bowel Disease; JW: Jehovah's Witness; ICU: Intensive Care Unit; UPMC: University of Pittsburgh Medical Center; IRB: Institutional Review Board; UH: University Hospital; CH: Community Hospital.

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BACKGROUND

Medicine is not only providing health care to the society, but it also incorporates respecting religious beliefs of individual members of the society and providing the best care possible with the available resources. Jehovah's Witnesses (JW) are distinct from other members of community where medical management dissects with their religious beliefs. JW are actively present in many countries but do not form the major religious group in any country. As per the 2013 yearbook of JW, worldwide population of JW who are actively involved is roughly 7.7 million.[1] Their estimated world-wide growth rate is around 2.1% with 3.8 million individuals in the US following this practice. There is a common belief among this group of individuals to not use blood transfusions or blood derived products due to religious beliefs. JW consider whole blood transfusion as a violation of God's law. Main body of JW directs followers to refuse blood transfusions in a "*life-or-death situation*" and many times acceptance of blood transfusion may lead to their expulsion from the religion and life-long social suffering.

However, when such individuals presents for medical issues where such drastic measures are necessary, it becomes an ethical dilemma for the care provider. One of such area is Inflammatory Bowel Disease (IBD) in JW. Lakatos, et al. reports incidence rate of ulcerative colitis can be up to 24.5/100,000 persons, while that of crohn's disease can be up to 16/100,000 persons worldwide, with the prevalence rate of IBD up to 396/100,000 persons.[2] CDC quotes that estimated people suffering from IBD is up to 1.4 million in the United States. Incidence and prevalence of this debilitating disease is increasing as per current systematic review conducted by Molodecky, et al. which reports highest prevalence rate of UC around 249 per 100,000 persons and that of CD to be around 319 per 100,000 persons in North America.[3] Exact incidence and prevalence of IBD in JW is not available in literature as per our knowledge, however, we can extrapolate these results to JW as there is no lower incidence or immunity to IBD has been reported earlier in them.

Proper management of IBD patients who are known to be JW can be a unique challenge as they accept most available medical treatments, but not blood transfusions or blood products. In this situation, ethical dilemma arises when there is a need for blood products in life-or-death scenario due to severe gastrointestinal bleeding, those who undergoes surgery and had major blood loss and acute anemia. There are no prior studies regarding management of IBD in JW, common problems encountered, interventions to avoid acute complications, long-term outcomes compared to general population and if there is any disparity in these outcomes compared to general population affected with IBD. We looked at the experience of treating IBD in JW, their care during acute bleed and also the outcome at two major hospitals of University of Pittsburgh Medical Center (UPMC). Aim of the present study was to initiate understanding of management of IBD in JW in order to improve their long-term outcomes in IBD patients.

METHODS AND PATIENTS

This was a retrospective study conducted during year 2010 at two hospitals of University of Pittsburgh Medical Center (UPMC). A retrospective review was performed to identify patients treated for IBD known to be JW between the years 2005 to 2009 at these two locations. We obtained Institutional Review Board approval (IRB) from individual hospitals of UPMC where study was carried out including University Hospital (UH) and Community Hospital (CH). Retrospective analysis identified total of 22 patients with known tissue diagnosis of IBD and were active JW. (University [UH], n=14 and community [CH], n=8). All patients were confirmed to be having IBD either by colonoscopy or by documented evidence during clinical care. Individuals were approached for informed consent for data pertaining to their care only and no other identifiable information. Their demographic data including age, gender, ethnicity, clinical presentation, treatment during hospitalizations and outpatient were abstracted from the chart. We also took note of complications (clostridium difficile, abscess, fistula, colonic cancer and small bowel obstruction) secondary to IBD in the hospital or as an outpatient. Treatment measures during emergent conditions like acute bleed, bowel obstruction and also different treatment options used for long term management of IBD were also noted. All the data were secured and analyzed by statistical software and use of Microsoft Office 2010. Patient characteristics and demographic variables were calculated by their means and percentage distribution among subjects. Similarly, frequency distributions of other variables were drawn: medications, complications, treatment of anemia and others.[4]

RESULTS

Patient characteristics are shown in Table 1. Among total of twenty-two patients who were JW and also had active or stable IBD including Crohn's disease or ulcerative colitis, males and females were equally distributed. Majority of them were Caucasians (68%) followed by African Americans (32%). Mean age of the patients was 51 years. Ulcerative colitis was diagnosed in 59% of individuals while remaining 41% had Crohn's disease. Among all the subjects, 77% were being managed as an outpatient while 23% were hospitalized for either flare of the disease, complication or other problems unrelated to IBD. Mean time interval between initial diagnosis and most recent follow up was 14 years. 68% of the subjects had documented colonoscopy reports with 27% showing active disease. Twenty-seven percent of the study patients had at least one of the following complications: clostridium difficile infection, abscess, fistula, colon cancer due to IBD and small bowel obstruction. Approximately 41% of them underwent surgery for complications. Half of the patients were on 5-ASA [Amino Salicylic Acid] agents (mesalamine, sulfasalazine or other 5-ASA), 18% of the patients were on immunomodulators including azathioprine, and 9% were on biologics including infliximab.

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Total number of patients	22
Age, mean	51 years
Gender Male Female	 11 11
Ethnicity Caucasians African Americans	 15(68%) 7(32%)
Median follow up	14 years
Ulcerative Colitis	13(59%)
Crohn's disease	9(41%)
Active disease	6(27%)
Post surgical	9(41%)
Complications	6(27%)
Outpatient management	17(77%)
Inpatient management	5(23%)
Intensive care unit	3(14%)
Medications 5 ASA Immune modulators Biologics	 11(50%) 4(18%) 2(9%)
Bloodless surgery	2(9%)
Death due to sepsis	1(5%)

Table 1: Patient characteristics N(%).

Blood tests revealed hemoglobin >10 g/dl in 68%, between 7 to 10 g/dl in 18% and <7 g/dl in 14%. After treatment for anemia, hemoglobin increased to more than 10 g/dl in 91%, and to 7 to 10 g/dl in 9% of the individuals. Table 2 represents different forms of treatments employed to treat symptomatic anemia. Oral (89%) or intravenous (11%) iron was the major form of treatment for chronic blood loss anemia (41%), followed by vitamin supplementation (32%). Red blood cell colony-stimulating factors erythropoietin was used in 18% of patients. Other agents which were used in the event of bleeding were: vitamin K (9%), albumin (5%) and desmopression (5%).

Iron (oral-89%, Intravenous-11%)	9(41%)
Vitamin B12	1(5%)
Folic acid	6(27%)
Erythropoietin	4(18%)
Vitamin K	2(9%)
Albumin	1(5%)
Desmopressin	1(5%)

Table 2: Treatment of anemia N(%).

Approximately, 14% patients were admitted to intensive care unit (ICU) due to some form of complication requiring ICU admission. One of patients received albumin, desmopressin, ionotropes and blood transfusion with consent for stabilization in ICU. Unfortunately, this patient died with organ failure secondary to sepsis. Rest of the patients who were admitted to ICU (9%), underwent bloodless surgery with cell saver technique with no mortality.

DISCUSSION

Our study is the first study in this population on IBD and objective was to start understanding whether any disparities exist on the basis of our prior understanding of IBD and its management. Although the study was performed on a small scale, following conclusions can be drawn. Results infer that treating IBD patients in JW carries good outcomes especially considering anemia treatment with conventional standards. Majority of patients can be treated in outpatient setting. Vigilant outpatient monitoring of blood counts as well as hemoglobin and pre-emptive iron and vitamin replacement can be useful in this individuals. Early recognition of anemia due to underlying IBD is essential for this population as they might refuse BT when it is severe requiring blood transfusion. In limitation of prior evidence in place in this vulnerable population, this study provides preliminary data regarding need for further introspection in this subject.

Most of the physicians in the setting of Gastrointestinal (GI) bleeding in IBD in JW are not comfortable due to the prior conception of JW's refusal of blood products. This might create assumption of difficulty in treating this population. While our data suggests that GI bleeding in IBD can be managed without giving them blood and by using alternate measures. In fact, few of the patients were critically ill in this study and underwent surgery however they still managed to do well with no deaths related to anemia or acute blood loss. In fact, a restrictive transfusion strategy as demonstrated by current evidence supports this fact indirectly.[5] Our study albeit with a small sample size indicates that conservative management in this population is no different than other religious groups. Complications of IBD in JW can be managed similarly as in general population with IBD.

Chronic anemia occurs in approximately 1/3 of patients with IBD and half of the IBD patients are iron-deficient.[6] Importance of using Intravenous (IV) iron replacement early on has been well-established. This approach avoids allogeneic blood transfusions and improves quality of life in IBD patients.[7,8] IV iron is safe and effective in the treatment of iron deficiency anemia in IBD patients, and erythropoietin is useful in a subset of patients with refractory anemia.[9] Recently, Litton, et al. reported findings of systematic review and meta-analysis of randomized controlled trials investigating the safety and efficacy of intravenous iron therapy in reducing requirement of allogeneic red blood cell transfusions.[10] Authors conclude that intravenous iron therapy is effective in increasing hemoglobin concentration, especially when erythroid stimulating agents are used and reducing the risk of allogeneic Red Blood Cell (RBC) transfusion and could have broad applicability to a range of acute care settings. Ball, et al. reported successful use of recombinant human erythropoietin in critically ill JW to stimulate red blood cells and prevent severe life-threatening anemia after review of prior case reports.[11] Sparling, et al. used erythropoietin preoperatively in the management of JW who were about to have revision total hip arthroplasty and reported their utility in achieving higher hematocrit pre-operatively because of their elective nature and the

moderately flexible timing associated with these procedures.[12] In this study, majority of patients were closely monitored easily as an outpatient with management of their blood loss anemia with iron supplementation as well as vitamin supplementation with improvement in their hemoglobin. This is the pattern commonly seen in general population with IBD. Those who were admitted in hospital also did well and only one patient actually required blood transfusion. With the advent of bloodless surgery, ethical dilemma of transfusion will get further narrower. Most presume that mortality is high without supportive blood. This is a good study to show that it is not the case and they can be managed well with no mortality and that outcomes are good. Thus, conservative anemia management with iron and if necessary, erythropoietin, in IBD patients who are JW can prevent their requirement for allogeneic blood transfusions.

Last decade has seen many advances in care of JW especially regarding alternatives for blood transfusions. Majeski, et al, reported surgical case series of 132 JW patients.[13] Following alternatives were suggested instead of transfusion of blood such as erythropoietin, iron dextran, aprotinin and Fluosol-DA 20%. Majeski, et al. further reported that technological surgical developments and advances, like the cell saver technique, argon beam coagulator, acute limited normovolemichemodilution, autologous whole plasma fibrin gel, and controlled hypotensive anesthesia during anesthesia have contributed substantially to a reduction in the operative loss of blood. Recent reviews also report uses of these alternative strategies and that despite their belief regarding transfusion, JW do not have a higher mortality rate after traumatic injury or surgery, especially if hemoglobin is kept at least 7 g/dL.[14]

Previous literature mentioned that iron replacement or other conservative treatment like erythropoietin use lead to improved hemoglobin and later the surgery was undertaken. This was done instead of using blood transfusion when individual with JW refused them before proceeding with surgery. Obviously, similar rules cannot be applied in emergent life-saving surgeries. Autologous blood transfusion or cell-saver technique can be offered in later scenario. With the cell saver technique, those individuals who has to undergo surgery can be transfused their own blood. In last decade, bloodless surgery and bloodless management program have been studied thoroughly and guidelines have been suggested.[15-17] It is being practiced at many centers nowadays. It will benefit not only individuals who are JW, but also individuals were refuse blood transfusion or not candidates due to earlier complication or possible risk.

Current study provides baseline information on treatment of anemia in JW and future studies with larger sample size should be carried out to study these findings. Many JW, who decline blood transfusions on religious beliefs, have been able to undergo complex medical and surgical procedures with conservative measures including iron replacement, erythropoietin and other pharmacologic measures. Our study stands in agreement with this fact as a first study among IBD patients. With growing JW population and requirement of surgery, this will be a big health care issue. Blood-free major surgery is a technological challenge in JW. Milligan, et al. mentions that techniques learnt from treating them may prove beneficial to all patients undergoing major surgery.[18] Although JW do not accept allogeneic blood transfusion, it is desirable to avoid blood transfusion in any surgical patients and application of blood conservative strategies might help reduce blood loss in any patient.[16] This is important not only from the aspect of taking care of JW, but also in general to reduce complications associated with blood transfusions - infection, volume overload, and blood transfusion associated reactions. We expect that with the advent of bloodless medicine, JW will benefit in future as well as general population. We recommend further studying IBD in JW to understand better strategies to manage IBD as well as blood loss anemia with a larger sample size. Increasing prevalence of IBD also makes requirement for blood products and health care expenditure a concern, therefore, it is essential to find ways to prevent complications due to IBD requiring surgery as well as finding techniques to minimize blood loss.

CONCLUSION

JW suffering from IBD does not endorse any disparity compared to general population and can be managed in similar fashion to the general population. Use of blood transfusion or blood products to treat anemia due to IBD in JW can be perplexing however manageable with other conservative modalities and results are similar as in general population. Most presume that mortality is high without supportive blood. This is a good study to show that it is not the case and they can be managed well with no mortality and that outcomes are good.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

REFERENCES

1. Jehovah's Witnesses. 2013 Yearbook of Jehovah's witnesses. Watchtower bible and tract society of Pennsylvania, USA, 2013.

2. Lakatos PL. Recent trends in the epidemiology of inflammatory bowel diseases: up or down? *World journal of gastroenterology: WJG.* 2006; 12(38): 6102-6108. doi: 10.3748/wjg.v12.i38.6102

3. Molodecky NA, Soon IS, Rabi DM, et al. Increasing incidence and prevalence of the inflammatory bowel diseases with time, based on systematic review. *Gastroenterology.* 2012; 142(1): 46-54 e42; quiz e30. doi: 10.1053/j.gastro.2011.10.001

4. Saligram S, Baidoo. L. Management of inflammatory bowel disease in jehowah's witness. *American Journal of Gastroenterology.* 2011.

5. Villanueva C, Colomo A, Bosch A, et al. Transfusion strategies for acute upper gastrointestinal bleeding. *The New England*

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journal of medicine. 2013; 368(1): 11-21. doi: 10.1056/NEJMoa1211801

6. Warsch S, Byrnes J. Emerging causes of iron deficiency anemia refractory to oral iron supplementation. *World journal of gastrointestinal pharmacology and therapeutics.* 2013; 4(3): 49-53. doi: 10.4292/wjgpt.v4.i3.49

7. Munoz M, Gomez-Ramirez S, Garcia-Erce JA. Intravenous iron in inflammatory bowel disease. *World journal of gastroenterology: WJG.* 2009; 15(37): 4666-4674. doi: 10.1097/MOG.0b013e32835bdc2e

8. Lee TW, Kolber MR, Fedorak RN, van Zanten SV. Iron replacement therapy in inflammatory bowel disease patients with iron deficiency anemia: a systematic review and meta-analysis. *Journal of Crohn's & colitis.* 2012; 6(3): 267-275. doi: 10.1016/j.crohns.2011.09.010

9. Gisbert JP, Gomollon F. Common misconceptions in the diagnosis and management of anemia in inflammatory bowel disease. *The American journal of gastroenterology.* 2008; 103(5): 1299-1307. doi: 10.1111/j.1572-0241.2008.01846.x

10. Litton E, Xiao J, Ho KM. Safety and efficacy of intravenous iron therapy in reducing requirement for allogeneic blood transfusion: systematic review and meta-analysis of randomised clinical trials. *Bmj* 2013; 347: f4822. doi: 10.1136/bmj.f4822

11. Ball AM, Winstead PS. Recombinant human erythropoietin therapy in critically ill jehovah's witnesses. *Pharmacotherapy.* 2008; 28(11): 1383-1390. doi: 10.1592/phco.28.11.1383

12. Sparling EA, Nelson CL, Lavender R, Smith J. The use of erythropoietin in the management of Jehovah's Witnesses who have revision total hip arthroplasty. *The Journal of bone and joint surgery American volume.* 1996; 78(10): 1548-1552.

13. Majeski J. Advances in general and vascular surgical care of jehovah's witnesses. *International surgery.* 2000; 85(3): 257-265.

14. Hughes DB, Ullery BW, Barie PS. The contemporary approach to the care of jehovah's witnesses. *The Journal of trauma.* 2008; 65(1): 237-247. doi: 10.1097/TA.0b013e318176cc66

15. Tokin C, Almeda J, Jain S, et al. Blood-management programs: a clinical and administrative model with program implementation strategies. *The Permanente journal.* 2009; 13(1): 18-28.

16. Gohel MS, Bulbulia RA, Slim FJ, Poskitt KR, Whyman MR. How to approach major surgery where patients refuse blood transfusion (including Jehovah's Witnesses). *Annals of the Royal College of Surgeons of England.* 2005; 87(1): 3-14. doi: 10.1308/1478708051414

17. Proposito D, Gramolini R, Corazza V, et al. Objectives of a bloodless surgery program. A comparative study (major surgery vs. minor-medium surgery) in 51 jehova's witnesses patients. *Annali italiani di chirurgia.* 2002; 73(2): 197-209.

18. Milligan LJ, Bellamy MC. Anaesthesia and critical care of jehovah's witnesses. *Continuing Education in Anaesthesia, Critical Care & Pain.* 2004; 4(2): 35-39. doi: 10.1093/bjaceaccp/mkh012