The Microenvironment

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THE CANADIAN HEMATOLOGY SOCIETY

SOCIÉTÉ CANADIENNE D'HÉMATOLOGIE

NEWSLETTER

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2012 CHS Executive Committee

President	Dr. Stephen Couban
Past-President & Editor, The Microenvironment	Dr. Tom Nevill
Vice-President	Dr. Aaron Schimmer
Secretary Treasurer	Dr. Molly Warner
Executive Vice-President	Dr. Gail Rock

Please join us...

Atlanta, 2012

The Canadian Hematology Society

Annual Reception Awards Presentations and Dinner at ASH

Sunday, Dec. 9, 2012 at 6:30 pm

Omni Hotel 100 CNN Centre, Atlanta

Email RSVP by Nov. 23, at: chsatash2012@gmail.com

Hope to see you there!

Message from the President

Dear Colleagues,

I want to update everyone about some of the significant events this year for the Canadian Hematology Society. The CHS Executive has held two face to face meetings this year and we have been busy!

Dr. Stephen Couban
President, CHS

Each year, Gena Piliotis and Christine Chen organize a very successful gathering of trainees in Hematology at the **Jerry Scott Day**. This year, the Canadian Hematology Society had a physical presence at the Jerry Scott Day and there was much interest from our junior colleagues in our organization.

We received an unprecedented number of new applications for membership but also expressions of interest in who we are and how we represent Canadian hematologists. We hope to continue this successful new initiative and have also contributed to the support of Jerry Scott Day.

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We have had a large number of ASH submissions from Canadian residents, fellows, Ph.D students and post-doctoral trainees for consideration of the **CHS Annual Awards.** I would like to thank my colleagues on the CHS Executive for reviewing these submissions The award winners will be announced at our forthcoming gala event in Atlanta.

I am very excited to report that the CHS has made a submission to the **International Society of Hematology** to hold this important international meeting in Vancouver in 2018. We are waiting to hear about our application. Tom Nevill, Gail Rock and the staff at our Head Office prepared a very compelling presentation.

There are many individuals in our Society who have made major contributions to the field of Hematology. The CHS Executive and I would like to receive nominations so that we can identify an **Honorary Member** of our Society on an annual basis.

Finally, we intend to hold a competition again early in the new year for the annual **R K Smiley Awards** which Tom Nevill established during his presidency. In response to feedback from our members, we are revising the deadline for these important awards.

The Canadian Hematology Society Executive and I look forward to seeing everyone at the ***Canadian Evening at ASH!*** The CHS Annual Reception, Awards Presentations and Dinner at ASH 2012, will be held Sunday, December 9th, 2012, at 6:30 pm, at the Omni Hotel, 100 CNN Centre, Atlanta, GA.

Message du Président

Chers **Collègues,**

Stephen Couban
Président
Société Canadienne d'Hématologie

Je souhaite tous vous informer des événements importants de cette année de la Société Canadienne d'Hématologie (CHS). Cette année, le Président de la CHS a conduit deux réunions en personne et notre emploi du temps a été chargé !

Chaque année, Gena Piliotis et Christine Chen organisent un rassemblement très apprécié des stagiaires en hématologie à **Jerry Scott Day**. Cette année, la Société Canadienne d'Hématologie était présente physiquement lors du Jerry Scott Day et les jeunes collègues de notre organisation ont porté un grand intérêt. Nous recevons un nombre sans précédent de nouvelles inscriptions mais également de nombreuses demandes de renseignement sur ce que nous sommes et sur la manière dont nous représentons les hématologues Canadiens. Nous espérons poursuivre le succès de cette initiative et avons également contribué au Jerry Scott Day.

Nous avons reçu de nombreuses soumissions ASH de la part des résidents, proches, Professeurs, étudiants et stagiaires post doctorants canadiens pour être considéré comme lauréats du prix annuel du CHS. Je souhaiterais remercier mes collègues membres du conseil d'administration de CHS pour avoir examiné ces soumissions et sélectionné les lauréats, qui seront récompensés lors de notre prochain gala à Atlanta.

Je suis très heureux de vous annoncer que CHS a sollicité la Société Internationale d'Hématologie, pour tenir cette réunion internationale importante à Vancouver en 2018. Nous attendons votre candidature. Rom Nevill, Gail Rock et toute l'équipe de notre siège ont mis au point une présentation convaincante.

Beaucoup de personnes de notre Société qui ont apporté des contributions majeures dans le domaine de l'hématologie. Le président de CHS et moi-même souhaiterions recevoir des nominations, de manière à ce que nous puissions identifier un **membre d'honneur** de nôtres société, sur une base annuelle.

Pour finir, nous avons a nouveau l'intention d'organiser une compétition l'année prochaine lors de la remise **des prix R K Smiley**, que Tom Nevill a mis en place au cours de sa présidence. En réponse à l'engouement de nos membres, nous révisons actuellement le délai de soumission des candidatures pour ce prix important.

Le Président de la Société Canadienne d'Hématologie et moi-même, sommes impatients de vous rencontrer tous lors de **la soirée Canadienne qui a lieu a ASH** ! La réception annuelle de CHS, la remise des prix et le diner ASH 2012, se tiendront le Dimanche 9 Décembre 2012, à 18h30, à l'Hôtel Omni, 100 CNN Centre, Atlanta, GA.

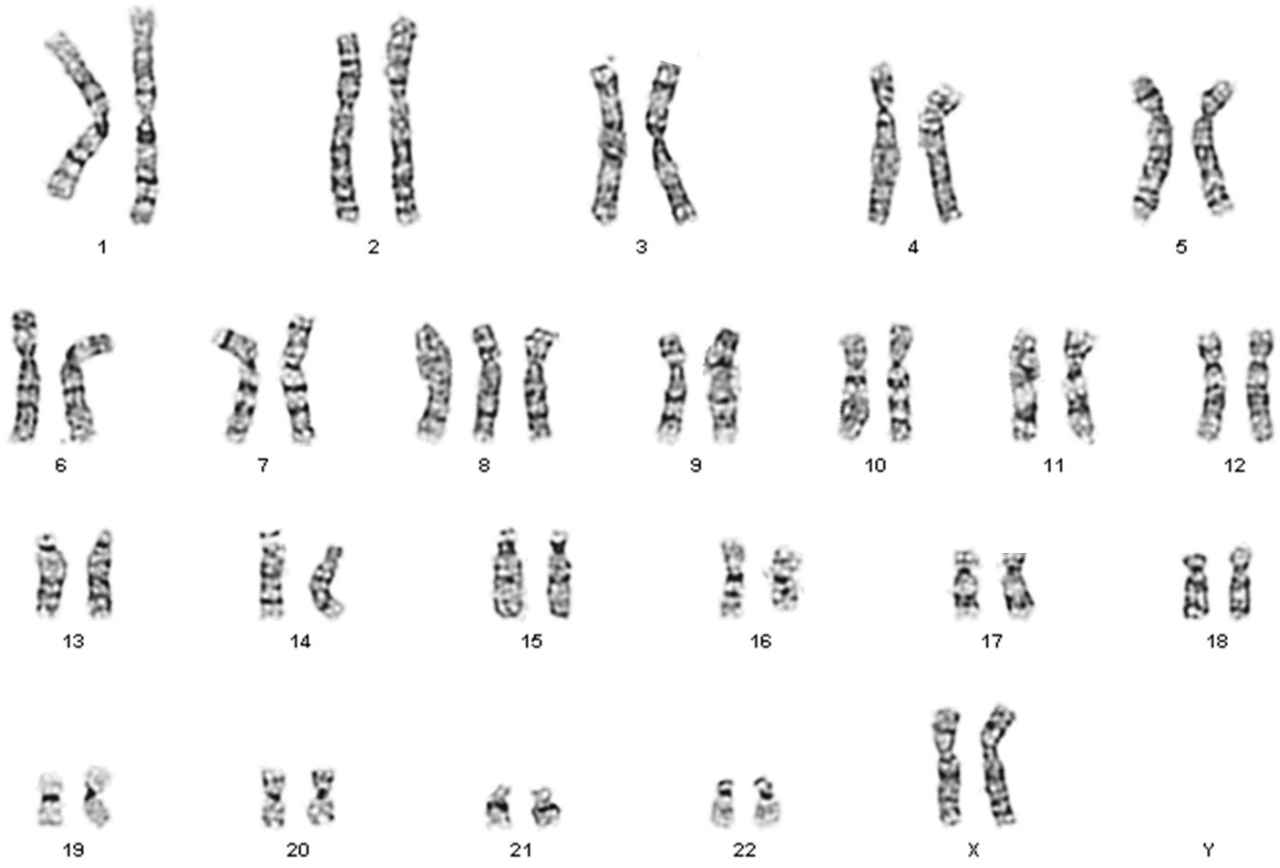
Stephen Couban, MD
Président, Société Canadienne d'Hématologie

DO YOU KNOW THE DIAGNOSIS?

- A 40 year-old woman is admitted to hospital with cellulitis of the left lower leg.
- Her past medical history is significant for a diagnosis of lymphedema of the left leg made at age 13 (in which she has had multiple episodes of cellulitis), a 25-year history of non-progressive anemia and thrombocytopenia (bone marrow examination done in 1987 was “non-diagnostic”) and severe genital and perianal warts (requiring multiple procedures for removal).
- Physical examination was unremarkable aside from extensive perianal and labial papillomatous lesions and diffuse lymphedema of the left leg with warmth and erythema of the pre-tibial region.
- Admission blood work showed a hemoglobin of 104 g/L (MVC 105), WBC of 2.4 x 10^9/L and platelets of 90 x 10^9/L.
- Differential revealed neutrophils 2.0, lymphocytes 0.2 and eosinophils 0.2.
- Renal and hepatic function was normal. Serum immunoglobulins revealed a polyclonal increase in IgG. Chest x-ray showed subtle bilateral lung opacities.
- Bone marrow examination was repeated and was hypocellular (40%) with mild erythroid and megakaryocytic dysplasia; blasts were 1%. Marrow metaphase analysis is shown in the photo.

What is the diagnosis?

(SEE BOTTOM OF PAGE 15)



Canadian Hematology Society
Société Canadienne d'Hématologie

The Canadian Hematology Society announces the 2013 R K Smiley Research Grant

Established in 2011, to mark the Fortieth Anniversary of the Canadian Hematology Society's service and support to hematology practitioners in Canada, this award is named in honour of the CHS Founding President, Dr. R. Kennedy Smiley.

In response to the announcement of this new research grant program and the initial invitation for proposals, the CHS received many impressive submissions from across Canada. The Executive Committee of the Canadian Hematology Society is very pleased to announce that the next deadline for submissions to the R K Smiley Award is February 15, 2013.

Dr. R. Kennedy Smiley
1922 - 2010
CHS Founding President

What does the R K Smiley Research Grant offer?

- This program provides start up grants of $10,000 aimed at pilot projects expected to lead to larger follow-up studies funded by CIHR or other grant funding agencies.

Who is eligible?

- Applicants may be clinicians or scientists within seven years of completion of training with a project relevant to the field of hematology.

How to Apply

Applications will contain

- Title of project
- Principle investigator and Co-investigators
- Background
- Relevance to hematology
- Research proposal
- Budget

Important Application Details:

- Description: one page length
- Additional page: budget
- Spacing: double-spaced
- Font: size 12

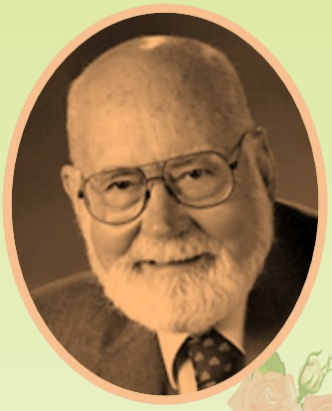
NB - Applications should be emailed to **chs@uniserve.com**

Application Deadline: **1800 hrs EDT, Friday, February 15, 2013**

Successful applicants will be notified in April 2013.

In Memoriam

Nobel Laureate: E. Donnall "Don" Thomas



E. Donnall Thomas
1920-2012

Born in the small Texas town of Mart, Don Thomas was the only child of a solo physician (who himself had arrived in Texas in 1874 at the age of four in a covered wagon) and his second wife.

After graduating from high school in 1937, Don entered the University of Texas at Austin, receiving a B.A. in 1941 and an M.A. in 1943. He then entered Harvard Medical School where he graduated with an M.D. in 1946. Following internship, he stayed in Boston to do a year of hematology training with Dr. Clement Finch, a pioneer in the field of iron metabolism (and who later enjoyed a 60-year tenure at the University of Washington).

Dr. Thomas went on to do postdoctoral work at MIT and medical residency at Peter Bent Brigham Hospital. During his residency, he worked closely with Dr. Joseph E. Murray (see below) and helped care for the first living related kidney transplant patient in December 1954.

Although Dr. Thomas's interest in the bone marrow and leukemia began in medical school, it flourished with his association with Dr. Sydney Farber, the father of modern chemotherapy, who provided Dr. Thomas with his first laboratory. He became intrigued by the studies of Leon Jacobsen and Egon Lorenz, who demonstrated that splenic shielding and marrow infusion could protect otherwise lethally irradiated mice.

Dr. Thomas moved to Mary Imogene Basset Hospital in Cooperstown, NY in 1955 and, with the help of Dr. Joseph Ferebee, began transplanting marrow in humans and dogs. Although he was responsible for the first successful human marrow transplant (from an identical twin) in 1956, it became apparent that marrow transplantation in humans would be challenging. He spent the next eight years working with dogs and laying out the basic concepts of marrow transplantation.

In 1963, Dr. Thomas moved to Seattle where he continued his canine studies and assembled a strong group of physician scientists and critical care nurses. Borrowing on Jean Dausset's description of human histocompatibility, the Seattle team began the modern era of human marrow transplantation in 1970 and in 1975 moved to the Fred Hutchinson Cancer Research Center where the first unrelated donor stem cell transplant was done in 1979.

Dr. E. Donnall "Don" Thomas, receives the Nobel Prize in Physiology or Medicine, 1990.

Photograph courtesy of FHCRC

Dr. Thomas acted as the President of the American Society of Hematology in 1988. He retired from patient care activities in 1990, the same year that he received the Presidential Medal of Science and shared the Nobel Prize for Medicine with his former colleague, Dr. Joseph E. Murray.

For the next decade, Dr. Thomas travelled and lectured widely as a Professor Emeritus and, in his eighties, was still lobbying in support of stem cell research and was a regular presence at FHCRC.

He died in Seattle on October 20, 2012 and is survived by his wife, Dottie and their three children, two of whom are physicians.

"***I said in the past that I have two attributes: one is I'm stubborn to keep doing it and the other is I attracted some good people to work with me***."

– E. Donnall Thomas, 2006.

MINI REVIEW

Prognostic Markers in Chronic Lymphocytic Leukemia

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Introduction

There is great heterogeneity in the rate of disease progression in chronic lymphocytic leukemia (CLL), even within specific Rai stage groups, and this has lead to the development of many prognostic markers.

However, the value of many of these makers is controversial and may depend on the patient's age, stage of disease, whether they have had prior treatment and what is being evaluated, eg, time to treatment (TTT), treatment-free survival (TFS) or overall survival (OS). We will only discuss here the commonly measured markers (Table 1).

1. Rai Stage and Clinical Features

Rai staging is based on a CBC and physical examination (not on CT scanning) and remains an important prognostic tool (Table 2). However, several points should be made. Firstly, because of routine blood counts, 70-80% of patients nowadays present with early stage (Rai 0/I) disease (1). Of these patients, 30-50% will require therapy in 1-4 years and have a median survival of 7-8 years (1).

Secondly, the median survival of patients with Rai stage III/IV disease is now 5 years, as opposed to 2 years in the original study, and this is partly related to improved therapy (3). Finally, only half the patients with Rai stage III/IV have cytopenias related to marrow replacement by tumor (4). One quarter have immune cytopenias, and their prognosis is far better than those with marrow replacement. The other quarter have other reasons for cytopenias, such as bleeding, renal failure or hypersplenism.

James B. Johnston,
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Generally, older individuals (>70 years) have a poorer relative survival (survival as compared to age and sex-matched controls) as compared to younger patients and men have a worse prognosis than women. Interestingly, over the past 20 years the prognosis for all patients has improved, except for women and the elderly (3).

2. Plasma Markers

The plasma LDH level is a measure of cell turnover and a sudden increase may indicate disease progression or the development of Richter's syndrome. The plasma β_2-microglobulin is derived from the class I major histocompatibility complex on the cell membrane of nucleated cells (5).

Increased levels predict TTT, TFS and OS (5,6). While β_2-microglobulin may partly reflect tumor burden, it is also a useful marker even in patients with low-bulk early stage disease (5). Several studies have recently shown that low plasma vitamin D levels predict a short TTT and OS, perhaps related to the ability of vitamin D to bind to and induce apoptosis in CLL cells (7).

2. Lymphocyte Characteristics

Survival decreases with increasing B cell or lymphocyte count at the time of diagnosis, with a cut-off B-cell count of >11 x 10^9/L predicting a shorter TFS and OS (8). The lymphocyte doubling time (LDT) is a useful measure of disease aggressiveness and patients with a LDT of <12 months have a significantly reduced TTT and OS (9). A recent study from Britain has demonstrated in early stage disease that patients with a LDT of <12 months required treatment in 2.5 years and had a median survival of 12.6 years while those with a LDT of ≥12 months required treatment in 18.6 years and had a median survival of 20.3 years (9).

IgVH mutational status is an important prognostic marker in CLL with 60% of cases being mutated and 40% unmutated. In the above British study, the IgVH mutational status was the most important prognostic indicator in a multivariate analysis with

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unmutated patients having a short TTT and OS (9).

However, because of the complexity in its measurement, IgVH measurements are not done routinely in Canada. Thus, CD38 and ZAP-70 have been developed as surrogate markers for the IgVH mutational status, and can be easily measured by flow cytometry. CD38 is a marker of cell proliferation while ZAP-70 is normally involved in signal transduction in T cells and is aberrantly expressed in CLL cells. While CD38 and ZAP-70 positivity usually implies ≥20% cells staining positively, the threshold for CD38 positivity varies according to the study and ZAP-70 measurements are notoriously inconsistent.

Moreover, the expression levels of both can changes over time. However, the CLL Research Consortium in the United States has demonstrated that for patients with all stages of disease, ZAP-70 is the more important marker than the IgVH mutational or CD38 status for TTT (10). In contrast, the British study evaluating only early stage patients showed that IgVH and CD38 were more important than ZAP-70 for measuring TTT and OS.

Fluorescent *in situ* hybridization (FISH) is useful to predict disease progression and response to therapy. Patients with deletions of 17p13 or 11q22-23 have poor prognosis, with a median survival of 2-3 years or 6-7 years, respectively (2). In contrast, the median survival for the other patients is 9-11 years. Patients with deletions of 11q22-23 (20% pts at diagnosis) typically are middle aged men with bulky lymphadenopathy, and prognosis can be significantly improved with immunochemotherapy (6).

The addition of rituximab to fludarabine/cyclophosphamide (FCR) can improve the CR rate from 15 to 51% ($p<0.0001$) and the OS at 3 years from 83 to 94% ($p=0.036$) (6). The significance of a deletion 17p13 depends on whether it is detected at diagnosis or develops during the disease course (9). Thus, 4-5% of patients at diagnosis have a deletion of 17p13 and one-third of these can have relatively stable disease (11). However, 10% of patient requiring treatment will have a deletion of 17p13 and these patients rarely respond to FCR with only one-third surviving 3 years (6). These patients require either alemtuzumab or a high-dose methylprednisolone regimen. By the time patients are fludarabine-resistant, one-third will have a deletion 17p13 (12).

Summary

β2-microglobulin and the LDT should be used as predictors of TTT

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Table 1. Prognostic Markers in CLL

Prognostic Marker	Better Prognosis	Worse Prognosis
Sex	Female	Male
Age	<70 yrs	>70 yrs
Rai Stage	0, I and II	III and IV
Lymphocyte count	<12	12
Lymphocyte doubling time	<12 months	≥12 months
Number of "Smudge cells"	>30%	<30%
ß2-microglobulin level	Low	High
Flow Cytometry		
- B cell count[1]	<11 x 10^9/L	≥11 x 10^9/L
- CD38[2]	<20% cells positive	≥20% cells positive
- ZAP-70	<20% cells positive	≥20% cells positive
FISH	Deletion 13	Deletion 11q22-23 or 17p13
IgV_H gene	Mutated	Unmutated

[1] Shanafelt TD, et al. Blood, 113:4188-96, 2009.
[2]The number of cells staining positively required for "positive" is unclear, but we take a value of ≥20% as positive.

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and OS for CLL patients with early stage disease, but the value of ZAP-70, IgVH mutational analysis and CD38 is more controversial. FISH should be carried out when treatment is required, as the results provide important information for prognosis and treatment.

Table 2. Rai Staging for CLL[1]

Rai Stage	Modified Stage	Description	Median Survival (yr)
0	Low risk	Lymphocytosis	>10
I	Intermediate risk	Lymphocytosis + Lymphadenopathy	9
II	Intermediate risk	Lymphocytosis + Splenomegaly	7
III	High risk	Lymphocytosis + hemoglobin <110 g/L	2-5‡
IV	High risk	Lymphocytosis + platelets <100 x 10^9/L	2-5‡

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RBC transfusion-dependent anemia in the absence of a documented marrow disorder

A 60 year-old man has a 4-year history of isolated macrocytic anemia. He has a history of hypertension but is otherwise well. Bone marrow examination on two occasions has been non-diagnostic.

He has required transfusion of 2 units of red cells (RBC) on a monthly basis for the past 2 years. Pre-transfusion blood work shows a hemoglobin of 75 g/L, MCV of 108, WBC of 5.4 x 10^9/L (with a normal differential) and a platelet count of 256 x 10^9/L.

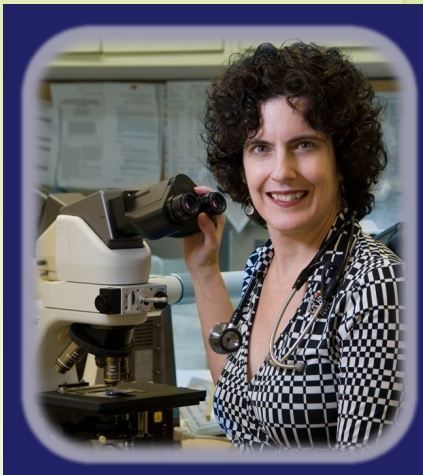
Serum creatinine was 125 umol/L with normal electrolytes. AST was 88 and ALT 110 but all other LFTs were normal. Serum ferritin was 1620 ug/L.

Serum EPO level was 645mIU/ml (Normal 3.3-16.6). He is referred for consideration of iron chelation therapy (ICT).

This patient has RBC transfusion-dependent anemia in the absence of a documented marrow disorder. Management would ideally be to identify the underlying condition and institute appropriate measures to reduce or eliminate transfusion requirements.

However, presumably occult inflammatory disorders, thyroid dysfunction, vitamin B_{12} deficiency, hemolysis , PNH and LGL have been ruled out. He has received approximately 50 units of RBC and almost certainly has significant transfusional iron overload (IOL).

Though the correlation between number of RBC units transfused and serum ferritin level is imperfect, the ferritin might be expected to be up to 2500ug/L (1) with this transfusion burden and GI blood loss leading to multifactorial anemia and a lower than expected ferritin should be ruled out.



Dr. Heather Leitch, Hematologist
St. Paul's Hospital
Vancouver, BC

A correlation between ferritin and liver iron content (LIC) is similarly imperfect, but if we assume that the true ferritin value is closer to 2500ug/L, the LIC would be around 3-5mg/g dry weight , indicating mild to moderate hepatic IOL(2). In some conditions such as thalassemia intermedia, however, ferritin significantly underestimates LIC (3).

This patient has mild transaminitis, and it would be interesting to document the LIC using T2* MRI if available. In beta thalassemia major, ferritin <2500ug/L portends superior cardiac disease-free survival (DFS) (4) and in this older age group one might expect the organs to be more sensitive to the adverse effects of IOL.

For these reasons, it would be reasonable to institute measures to reduce IOL, and anything that reduces or eliminates transfusion requirements should achieve this goal.

Potential benefits of reducing IOL include reducing progression to hepatic fibrosis and cirrhosis, improving cardiac DFS, and possibly impacting on endocrine endpoints such as glucose tolerance.

In Myelodysplastic syndrome (MDS), a possible diagnosis in the case presented, improvement in hematologic parameters has also been described.

When examined by IWG 2006 criteria in transfusion-dependent MDS patients receiving ICT with deferasirox (DFX), a 22.6% erythroid response rate has been observed suggesting an impact of IOL reduction on bone marrow function (5).

In addition, pre-clinical data suggest that IOL may accelerate progression of MDS to AML (6) and that chelators may promote differentiation of leukemia cells, in keeping with clinical (retrospective) data indicating superior leukemia-free survival in patients receiving chelation (7).

However, these endpoints, if confirmed, are presumably a result of reducing oxidative stress induced by the presence of non-transferrin bound iron as opposed to direct deposition in the organs, and may apply only to patients with the underlying genomic instability of hematologic malignancies; whether this applies

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to the above patient is unclear.

The serum EPO level is 645 IU/mL. In MDS, this EPO level and transfusion requirement give only a 7% chance of responding to an erythropoiesis-stimulating agent (ESA) (8); whether these data can be applied to a patient with anemia of uncertain cause is similarly uncertain.

If coverage of the cost of an ESA is available, a therapeutic trial might be in order; if a meaningful response were achieved, IOL should decrease over time as iron is incorporated into newly formed RBC. Best case, iron could be off-loaded more readily through ESA-assisted phlebotomy.

In the absence of ESA response, it would be reasonable to consider ICT in this patient. The options are DFX, an oral chelator, and deferoxamine (DFO), which because of its short half-life is administered by continuous subcutaneous infusion for at least 12 hours per day.

Chelation should be undertaken and monitored according to published recommendations (9) with respect for potential side effects. GI side effects with DFX should be managed according to guidelines (10). The creatinine must be monitored regularly and volume status optimized.

Assuming a patient weight of 80kg, the creatinine clearance is >70mL/min, safe for starting DFX. Similarly, the level of transaminitis is not concerning for undertaking this therapy, although the AST and ALT should be monitored. Prior to starting ICT, he should undergo a full opthalmologic assessment, including slit lamp examination, in addition to auditory testing, and these should be repeated at least on a yearly basis, or more frequently as indicated.

Deferasirox is generally initiated at 20mg/kg/day and increased as tolerated to 30-40mg/kg/day to attain reasonable iron reduction. The dose should be reduced or DFX held if side effects occur and may be reintroduced at a lower dose once they resolve. Chelation is usually reduced or discontinued once the ferritin is <1000ug/L, although this practice is based on side effects of DFO at lower ferritin levels, and a lower threshold may be introduced with DFX in the future.

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Editor
The Microenvironment
Dr. Tom Nevill

DID YOU KNOW?

About the Canadian Hematology Society

The Canadian Hematology Society (CHS) is a professional organization, representing all physicians and scientists with an interest in the discipline in Canada. Currently, the CHS has approximately 350 members.

Established in 1971

The first annual meeting of the Society was held in the Richelieu Room of the Chateau Laurier in Ottawa on the 20th of January 1971. Fifty-six members attended that meeting, where the draft bylaws, presented by the executive were approved.

R.K. Smiley was appointed as the first President. ***Al Cousineau*** was named Vice President, and ***W. Corbett*** as Secretary Treasurer.

In 2008, for the first year since its inception, the society did not hold an annual meeting in Canada and since that year, the annual business meeting has been held in conjunction with the American Society of Hematology (ASH) December meetings.

Historically, Canadian Hematologists have gathered for a social evening on the Sunday evening of the American Society of Hematology's annual meeting. This tradition remains unchanged from the founding days and included an awards night in which selected abstracts from the ASH meeting are reviewed.

Research Awards

Today, awards are generally presented for the two best resident abstracts, the two best abstracts from PhDs and one award for a junior faculty member.

In 2008 the CHS began a new tradition of combining the reception, awards evening and a gala dinner for all Canadian hematologists. This is a major function for the CHS — it is very well attended and brings together the largest group of Canadian hematologists under one roof. It is a great chance to network!

In 2011, to mark its fortieth anniversary, the society established the RK Smiley Research Award Program, in honour of the founding president.

Communications

The CHS has published this newsletter for the past many years. It is distributed via the web site http://www.canadianhematologysociety.org/ A printed copy is also mailed to each member.

The newsletter, *The Microenvironment*, under the editorship of ***Dr. Tom Nevill,*** carries a Message from the President in each issue, which gives a good overview of activities, ongoing initiatives and plans on behalf of the executive committee. It also carries several regular features as well as information about membership, career opportunities, awards programs, and upcoming events.

Membership in the CHS

Membership is open to physicians engaged in the practice of clinical or laboratory hematology in Canada or Canadian physicians engaged in such practice, or persons with university degrees making continuing contributions to research in physiology or pathology in hematology in Canada.

In appropriate cases, the requirement for a university degree or other qualifications may be waived if, in the opinion of the Executive Committee, the candidate is making significant continuing contributions to science.

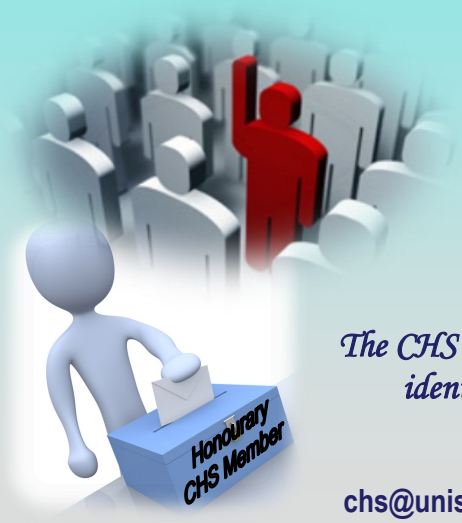
Non-members may be invited to become Honorary Members of the Corporation by virtue of their outstanding contributions to any discipline which is of importance to hematology.

Active Members only may vote, hold office and pay dues. Honorary, Emeritus and Associate (fellows-in-training) members shall have the privileges of the Corporation except for voting, holding office and paying the $75. annual dues.

Membership forms are available on the CHS website or from CHS Administration office at 613-748-9613, or by email:

canadianhematology@uniserve.com

CHS HONOURARY MEMBERS



Please send your nominations

"There are many individuals in our Society who have made major contributions to the field of Hematology.

The CHS Executive and I would like to receive nominations so that we can identify an Honorary Member of our Society on an annual basis."

Dr. Stephen Couban, President
Canadian Hematology Society
November, 2012.

chs@uniserve.com

Upcoming Events

- The **Canadian Hematology Society Annual Reception, Awards Presentation & Dinner**, will be held (during ASH) **Sunday December 9, 2012**, in **Atlanta GA**.

  For more information: **chs@uniserve.com**
  See our poster on Page 15 of this newsletter

- **The American Society of Hematology (ASH) 54th Annual Meeting and Exposition**, will be held **December 8 – 11, 2012**, in **Atlanta GA**.

  For information: **www.hematology.org**

- **The Canadian Bone Marrow Transplant Group (CBMTG) April 10—13, 2013, Fort Garry Hotel, Winnipeg, Manitoba**.

  For information: **www.cbmtg.org**

- **Canadian Apheresis Group & Canadian Association of Apheresis Nurses Annual General Meeting, April 11—13, 2013, Fort Garry Hotel, Winnipeg, Manitoba.**

  For information: **cag@cagcanada.ca**

- **Cytopenia Symposium,** Friday, April 26, 2013 1:00 PM—5:00 PM, in the Li Ka Shing Knowledge Institute, St. Michael's, 30 Bond Street, Toronto, ON M5B 1W8

- **International Society of Laboratory Hematology (ISLH)** May 10—12, 2013, at the Sheraton Centre in Toronto, Ontario

  For information: **www.islh.org/ISLH_2013**

Fellowships

Thrombosis Fellowship 2012-2013 Jewish General Hospital, McGill University

The JGH Thrombosis Program is currently accepting applications for a one year fellowship (July 1, 2013 - June 30, 2014) to acquire and consolidate expertise in Thrombosis. Specific areas of clinical activity include the Thrombosis Clinic, Anticoagulation Clinic and In-patient Thrombosis Consultation Service. Our Thrombosis Program also encompasses a broad range of research activities that relate to diagnosis, risk factors and treatment of venous and arterial thromboembolic disease.

Jewish General Hospital

For information, please contact:

Dr. Susan Kahn
514-340-7587
susan.kahn@mcgill.ca

Thrombosis Clinical & Research Fellowships - Up to 3 positions

Applications are encouraged from MDs who have completed or who will complete General Internal Medicine, Respirology and/or Hematology training. Foreign medical graduates with equivalent qualifications are eligible.

Applicants may apply to one of three training streams:
1.) Clinical Fellowship, one-year—To consolidate expertise in thrombosis.
2.) Clinical and Research Fellowship, 2-3 years (to become a clinician investigator in thrombosis (Fellows enroll in the Master's of Clinical Epidemiology Program at the University of Ottawa).
3.) Clinical and Education Fellowship, 2-3 years (to become a clinician educator in Thrombosis. (Fellows enroll in a Master's in Education).

THE OTTAWA HOSPITAL
L'HÔPITAL D'OTTAWA

To apply, please contact:
nlanglois@ohri.ca

Details are also available on the CHS website.

LEUKEMIA/BONE MARROW TRANSPLANTATION FELLOWSHIP VANCOUVER

The Leukemia/Bone Marrow Transplantation Program of British Columbia offers 1 or 2 Year fellowships to provide advanced training in the management of adults with hematological malignancies including all aspects of allogeneic and autologous hematopoietic stem cell transplantation (HSCT).
Candidates should be registered in, or completed a recognized hematology or oncology training program.

For more information: leukemiabmtprogram.org

Interested candidates should submit
a CV and names of three references to:
Dr. Donna Forrest, Fellowship Director,
Leukemia/BMT Program
BC Cancer Agency & Vancouver General Hospital

BC Cancer Agency
CARE + RESEARCH
An agency of the Provincial Health Services Authority

Phone: (604) 875-4089
FAX: (604) 875-4763
Email: dforrest@bccancer.bc.ca

Career Opportunities

Chief, Division of Hematology for the Department of Medicine
University at Buffalo, The State University of New York
School of Medicine and Biomedical Sciences

The next Chief will arrive at a pivotal time in the history of the Department of Medicine. UB's recruitment of Anne B. Curtis, M.D. in 2010 and her appointment as the inaugural Charles and Mary Bauer Professor and Chair of the Department marked a new period of reinvestment in the Department.

The Division of Hematology will benefit from the excitement generated by this investment and the recruitment of new faculty to the Department. Its new Chief will have an opportunity to expand specialized clinical services to meet the needs of the community and enjoy the financial support to develop clinical, translational, and basic research within the Division. The new Clinical and Translational Research Center on the Buffalo Niagara Campus opened in May 2012 to support these research efforts.

University at Buffalo
The State University of New York

Lauren R. Schaad
Senior Associate

KORN/FERRY INTERNATIONAL
265 Franklin Street, 17th Floor
Boston MA 02110
Tel: +1 (617) 790-5729
Email: lauren.schaad@kornferry.com

...from Page 3:

THE DIAGNOSIS?

The Answer:

- The metaphase analysis shows a female karyotype with +8 consistent with myelodysplastic syndrome.
- The presence of severe warts and both lymphopenia and monocytopenia was felt to be suspicious for an immunodeficiency state.
- Blood tests were sent for genetic analysis and showed an 802G>T mutation of the GATA2 gene consistent with MonoMAC syndrome.
- This recently described disorder has a plethora of manifestations including susceptibility to non-tuberculous mycobacterial, fungal and viral infections, propensity to develop MDS (often with hypocellularity and +8) or AML, development of other malignancies, alveolar proteinosis or autoimmune syndromes and the presence of idiopathic lymphedema.
- Treatment is supportive although several patients have undergone successful allogeneic stem cell transplantation.

Please join us!

Sunday, December 9, 2012

THE CANADIAN HEMATOLOGY SOCIETY

CHS CH

SOCIÉTÉ CANADIENNE D'HÉMATOLOGIE

Annual Gala Evening at ASH

Reception: 6:30 PM

Awards Presentations and Dinner: 7:30 PM

Omni Hotel, 100 CNN Centre, Atlanta, Ga.

For details: phone (613) 748-9613 or email: chs@uniserve.com
To reserve, please email: **chsatash2012@gmail.com**

The Microenvironment

November 2012

Your Canadian Hematology Society
Société Canadienne d' Hématologie Newsletter

Membership Matters

The Canadian Hematology Society has represented all physicians and scientists with an interest in the discipline in Canada since its founding 40 years ago in 1971. Our society now has over 300 members.

Active Membership is open to physicians engaged in the practice of clinical or laboratory hematology in Canada and to any persons doing scholarly research in hematology in Canada.

In appropriate cases, the requirement for a university degree or other qualifications may be waived if in the opinion of the Executive Committee the candidate is making significant continuing contributions to science.

We welcome residents and fellows in approved university training programs in hematology or hematological pathology as ***Associate Members***. Associate members will not be required to pay dues until the completion of training.

Emeritus Membership is open to individuals at the age of 65 or those who were active members and request a transfer of status with adequate reason. Emeritus members will not be required to pay a membership fee.

Non-members may be invited to become ***Honorary Members*** of the Corporation by virtue of their outstanding contributions to any discipline which is of importance to hematology.

CHS members are reminded ...

to please remit your 2012 Annual Dues. **Your $75. annual dues payment** may be made online at the CHS website: **www.canadianhematologysociety.org**

Or mailed to: **Canadian Hematology Society, 199-435 St. Laurent Blvd., Ottawa, Ontario K1K 2Z8**

Please provide the following information with your payment:

2012 Membership Renewal: Canadian Hematology Society

Membership Status

Active ☐
Associate ☐
Emeritus ☐

Has your status changed?

Yes ☐
No ☐

Name: _____

Title: _____

Email: _____

Work Address: _____

_____

Work Phone: _____

Work Fax: _____