



NEWSLETTER

Vol 1 No 3

THE D^u PROBLEM - HOW DO WE REPORT IT?

By definition, D^u is a form of the D antigen which gives some, but not all of the reactions expected of D. There are two main causes for depressed D activity on red cells:

(a) Depression of D by C in *cis*: When the structural gene responsible for D is partnered on the same chromosome with the structural gene responsible for C, the latter has a depressive effect.

(b) Mendelian D^u : This is the commonest form of D^u , where poor expression of the D determinants is an inherited characteristic.

It is well known that the D antigen is not a single entity, but rather a cluster or mosaic of different antigenic determinants. These determinants are usually labelled A, B, C, D. When all parts are used experimentally as an immunogen, the antibody produced is anti- $D^{A+B+C+D}$. Antibody, however, can also be produced against a particular segment of the whole antigen. Weiner *et al* found four anti-D sera formed in D-positive individuals that were highly selective in their reactions. These

became known as anti-Rh^A, anti-Rh^B, anti-Rh^C and anti-Rh^D. These same workers also found evidence that this is not the end of the list.

In general, D^u individuals are treated as Rh-positive donors and Rh-negative recipients. The problem arises in the method of reporting D^u .

Many laboratories in this country have devised their own way of reporting an individual found to be D^u . Some refer to the individual as Rh-positive, others as Rh-negative, D^u positive. The problem is compounded to some extent by the fact that D^u reacts differently with different commercial antisera. One laboratory may type the individual as Rh-positive, while another may type the same individual as Rh-negative. This often results in confusion on the part of the doctor, especially in pre-natal cases, where he may be unsure of how to treat the patient.

Very often, two laboratories will agree in the typing of the individual, yet will have different ways of reporting the result.

The obvious answer is standardization - for all laboratories to agree on a particular way of reporting D^u .

Perhaps the logical way of reporting is to call such individuals Rh-positive, D^u positive. This is based on the fact

that the D gene is present in these individuals, and so is the D antigen, however weak. In other words, an individual who possesses the D antigen is D (Rh) positive, regardless of the reactive strength of the antigen.

The question then arises: "Could the D^u individual induce primary immunization to D?" Mollison states that this is doubtful. Schmidt *et al* transfused 68 units of D^u positive blood to 45 Rh-negative recipients - none of whom produced anti-D.

A donor who is D^u, therefore, would be more correctly classified as Rh-positive, D^u positive, and the recipient would be unlikely to develop anti-D. It should be noted, of course, that if a patient has a partial D antigen, he could form anti-D; however, this occurrence would be extremely rare, much more rare, indeed, than the formation of anti-K or anti-c in a K-,c-individual, for which no precautions are taken.

Comments are invited on the above article.

MEETINGS OF INTEREST

On Thursday, June 14th at 5.30pm, the Academy of Medicine and the Toronto General Hospital Division of Hematology will sponsor a lecture by Professor Sir John Dacie entitled: "Evolution of ideas on the life-span of the red blood cell." The lecture will be held in the Toronto General Hospital Auditorium.

From June 16th-20th, the Canadian Congress of Laboratory Medicine will be held at the Quebec Hilton, Quebec. Information can be obtained from CCML/CCIM, Department de pathologie, Faculte de medicine, Universite Laval, Quebec, Que, G1K 7P4.

The national convention of the Canadian Society of Laboratory Technologists will be held in Fredericton, New Brunswick from June 17th-21st.

An International Symposium on the subject of Regulation by T cells will be held by the Canadian Society of Immunology from June 23rd-26th. Information can be obtained from Dr H.-S. Teh, Department of Microbiology, University of British Columbia, Vancouver, B.C, V6T 1W5.

The annual meeting of the Ontario Society of Medical Technologists will be held in London, Ontario from October 4th, 1979

A LARGER NEWSLETTER

Because of the number of programmes being undertaken by C.A.I.H. at this time, the NEWSLETTER has been extended to 12 pages. The size of the NEWSLETTER will not remain constant, but will vary according to the amount of information that we feel should be reported.

Again, we appeal for members to send articles, letters and questions to us, so that C.A.I.H. may fulfill its aim to provide a forum for the exchange of ideas among Canadian Immunohematologist

THE LECTURE PROGRAMME

C.A.I.H. - CANLAB POSTGRADUATE IMMUNOHEMATOLOGY WORKSHOP
FINAL REPORT: May 3rd, 1979

A wet workshop on "Special Problems in Immunohematology" was held April 25th and 26th, 1979 at the Edmonton Plaza Hotel, Edmonton, Alberta.

Elizabeth (Beth) Kenimer, MS, MT(A-SCP), Scientific Specialist of DADE, Division of American Hospital Supply Corporation, Miami did an excellent job of conducting the workshop. All workshop attendants expressed their hopes that Beth would do future workshops here.

Although the workshop registration was originally set at twenty, the co-organizers of the workshop selected twenty-two of the thirty-two applications. Because more than one application was received per place of employment, each institution with applicants was granted one position in the workshop. One position was also granted to "Teaching". This offered a few alternatives:

- 1.) two different individuals each attending one day
- 2.) one individual attending both days
- 3.) two individuals attending both days; both receiving the lectures with each attending one day of laboratory work.

This system allowed twenty-two positions for the workshop. Only two of the original applications were

excluded from the workshop. All applications were acknowledged by telephone or letter. In most cases, the individuals received both means of acknowledgements. On the day before the workshop each institution having participants was re-contacted to ensure that full registration would be guaranteed. When twenty-four individuals appeared during registration on the first day, the extra people were allowed to attend with the following provision:

During the lab work, two individuals per bench station worked together in a 'worker and helper' situation. This system worked very well. Those individuals working in this situation found it more beneficial than those working alone. Whenever possible, the two individuals working in the system were paired by similarity of either job position, teaching or place of employment.

The workshop began and ended with a quiz. The results of the exams will be sent to the workshop coorganizers who in turn will submit this information with the application for CSLT course credit assessment. The subject materials that was presented is outlined below.

All financial costs, equipment, reagents and hotel facilities during the workshop were furnished by Canadian

Laboratory Supplies. This also included coffee breaks and lunch for the two days.

At the end of the workshop, each person was given the workshop evaluation form to complete; the results of which are summarized below.

- 1) Beth was an excellent instructor. Workshop was well organized and beneficial.
- 2) Time management was poor i.e. less time for coffee and lunch breaks, time schedule was not strictly enforced
- 3) Topics presented were useful, not complicated and applicable to most
- 4) Receiving a list of suggested readings in advance of workshop... an excellent idea provided they were received at least two weeks in advance of the workshop. They felt this was needed to fully appreciate the content of any workshop.
- 5) Wet workshops more beneficial than a dry workshop. The knowledge gained from lectures can be further cemented through practical application. A wet workshop offers more opportunity to talk to other technologists.
- 6) Ideas for future workshops;
 - wet workshop on Low Ionic Strength Methods
 - management and ordering of blood products
 - update on current topics
 - antibody investigation of multiple antibodies
 - clinical significance of particular antibodies in blood transfusion and in HDN.
 - platelet therapy analysis

- HLA techniques
- coagulation
- crossmatch problems (Common suggestion)
- basic Immunohematology for small hospitals
- prenatal and postnatal investigations
- dealing with emergency blood situation: major and minor: small and large hospital
- resolution of cold antibodies
- more on complement
- bacterial contamination
- 7) Space in workshop should have been larger; more equipment; more time for practical work

In conclusion, the workshop provided benefits to those involved.

Workshop Coorganizers:

ROBIN WALSH (Canlab Supplies, Edmonton and
MAUREEN WEBB (Provincial Director of Continuing Education for Alberta)
C.A.I.H. Board member

*SUBJECT MATERIAL
SPECIAL PROBLEMS IN IMMUNOHEMATOLOGY
A WET WORKSHOP
Edmonton, April 25-26, 1979,*

*FIRST DAY: RESOLVING ABO AND Rh
TYPING PROBLEMS*

Occasionally, discrepancies arise between results of forward and reverse grouping procedures which make it difficult to correctly determine the

ABO group and Rh type of a donor or recipient. In this session, situations which may involve such discrepancies were presented as well as a logical approach for resolution of the discrepancies. In the laboratory, examples of some of the less common causes of ABO and Rh typing discrepancies were investigated. The participant was able to utilize a variety of methods useful in determining the correct ABO and Rh type and in facilitating accurate antibody screening, identification, and compatibility of these 'patients.'

SECOND DAY: DIRECT ANTIGLOBULIN TESTING

Direct antiglobulin test results can provide physicians with information necessary for better patient care in cases of hemolytic disease of the newborn, in transfusion reaction, and in autoimmune as well as drug induced hemolytic anemia. The purpose of this session was to familiarize the blood bank technologist with the rationale of the direct antiglobulin test, and to provide insight into clinical situations in which globulin sensitized erythrocytes may have significance in patient diagnosis. The lecture was an overview of the theory of the manufacture and specificities of the antiglobulin serums and their usefulness in identification and characterization of the positive D.A.T. The laboratory session following the lecture was designed to provide the participant with the opportunity to investigate various samples with positive D.A.T.'s resulting from immunologic as well as non-immunologic mechanisms.

REPORT FROM THE DIRECTOR OF EDUCATIONAL SERVICES

The wet workshop in Edmonton was a huge success, as will be obvious from the account in this NEWSLETTER.

Since that time, we have received a letter from Mae Kit, who is looking after the Educational programme at the Newfoundland CSLT convention, allowing C.A.I.H. to participate.

We have also had a letter from D.J. James, General Manager of Hollister Limited, who are interested in our lecture programme and who may be interested in sponsorship.

In the interim, we have been very busy recruiting provincial directors of the C.A.I.H. Lecture Programme, and the following people have agreed to serve:

*Gayle Hayton (British Columbia)
Maureen Webb (Alberta)
John Cellaire (Saskatchewan)
Elizabeth Omeniuk (Manitoba)
Chris Atkinson (Ontario)
Denis Paradis (Quebec)
Ann Robertson (New Brunswick)
Joe Massaquoi (Newfoundland)*

We now only need provincial directors from Nova Scotia and Prince Edward Island and (if possible) from the territories in order to complete the list.

We are most grateful to those people who agreed to give their time and their effort to this programme, which I am confident, will be a huge success

LINDA SHANAHAN (Director of Educational Services)

NEWSBRIEFS

QUESTIONS AND ANSWERS:

C.A.I.H. CHARTER SIGNED:

The charter of the CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS was signed on May 11th, 1979. The original date for the signing had to be cancelled because of bad weather. Those who signed the charter were:

NEVILLE BRYANT (President of C.A.I.H.)

LINDA SHANAHAN (Director of Educational Services)

PATRICIA STILES (Vice-President of C.A.I.H.)

FAYE BOYCE-SIDEEN (Board Member)

Dr DAVID SUTTON (Board Member)

All signatures were witnessed by KITTY ZANATA, a member of C.A.I.H.

MEMBERSHIP

C.A.I.H. now has over two hundred members, but more applications keep coming in every day. In spite of that, we need everyone in C.A.I.H. to encourage people to join us. If you need application forms in English or French, please write C.A.I.H., P.O. Box 5358, Station A, TORONTO, ONTARIO, M5W1N6. Can we exceed 500 by the end of the year?

COPING WITH BLOOD SHORTAGES

(Lead Article - C.A.I.H. Newsletter - March-April, 1979)

Sir,

"Blood Bankers" are aware of the fact that there are many variables that can cause shortages of blood or blood components. One common practice is to blame the Red Cross for this problem and to defer examining the situation in greater detail. This is short-sighted. Anyone who doubts the efficiency of the Red Cross should examine the yearly Red Cross reports. One fact that immediately becomes evident is that in spite of a plateau of the number of donors processed, increased fractionation of blood into specific blood components has met the ever increasing surgical and medical demands.

In my opinion, some of the shortages that exist, are created by the policies and actions of the very people who are complaining.

How many blood banks have an outdating of blood components received of ten percent or less? An increased awareness of inventory control and blood utilization analysis would be a great step forward in reducing the current high outdating (wastage) of blood components.

What is the ratio of the number of crossmatches performed in your hospital to the number of units actually transfused? Is this ratio appropriate when

compared to other hospitals of similar size and offering similar services? Every day that a unit of crossmatched blood sits on the shelf unused, is one day closer to outdating.

Does your hospital have a Maximum Surgical Blood Order Schedule? This is one effective way to reduce excessive crossmatching. An MSBOS is a list of the maximum number of units of blood which will be crossmatched for a given surgical procedure (with physician or surgeon over-ride when necessary), based upon a hospital's *acutal intra-operative transfusion experience*.

For excellent discussions on establishing an MSBOS and inventory control, refer to:

1. Bear et al: Reducing crossmatching of blood for surgical patients through a maximum surgical blood order schedule
P.A.S.Reporter, Vol 15, No 11, 1977
2. Friedman, B et al: The Maximum surgical blood order schedule and surgical blood use in the United States
Transfusion 16:300, 1976
3. Friedman, B.: Blood bank inventory control and blood utilization analysis
American Society of Clinical Pathologists Commission on Continuing Education: Immunohematology Check Sample no 1-100 (1978)

Another means of reducing wastage caused by outdating, would be to recycle units

that are close to outdating to another hospital that historically, would have a better chance of using them. In essence, we as blood bankers do this already. If we can not get a specific request filled through the Red Cross, we often phone other hospitals nearby and ask if they can send us the component.

The Red Cross is reluctant to accept the return of components issued to a hospital for recycling to another for many reasons - one being that they have no control over the conditions of storage.

I would ask the following questions and ask you to send your replies to the editor for tabulation and publication in a future edition of the C.A.I.H. Newsletter:

1. Have you accepted blood from another hospital to meet a specific need in the past year?
2. Have you sent blood to another hospital to meet their needs in the past year?
3. Would you consider it an improvement in policy if you could sent back units with one week shelf life to the Red Cross for recycling to other hospitals?
4. Would you accept a recycled unit from the Red Cross with one week shelf life as a part of your regular order?

Increased awareness and formu-

lation of good inventory control and blood utilization policy at the hospital level can not but help in reducing the shortages that we all experience from time to time.

Submitted by
W. Robert I Wallace
Montreal, Quebec

Mr Wallace is Charge technologist in the Blood Bank at St Mary's Hospital in Montreal, Quebec

ONE UNIT TRANSFUSIONS

C.A.I.H. QUESTION OF THE MONTH
(March-April Newsletter, 1979)

Sir,

It is my opinion that the one unit transfusions have been criticized far too much. Let us look at some situations where the one unit transfusions are used.

1. Acute Bleed: This is a situation where a patient starts to bleed very suddenly and stops just as quickly.

It may be during an operation that the patient develops a sudden bleed and the physician is faced with the problem of whether to transfuse or wait. If he waits, the patient may go into shock and other complications may follow. He naturally orders a unit of blood started on the patient. By the time the unit is partially or completely transfused, the bleeding stops and no further blood is needed.

Another situation is the sudden bleeding that occurs in some women during delivery or just after giving

birth. The bleeding is sudden, the doctor cannot take the chance of too great a blood loss so he starts a transfusion. In most cases, the bleeding stops quickly and there is no further need for blood

These are just two (2) examples - there are many more.

QUESTION: What do you think the physician should do in these situations?

2. Children and Newborns: In the case of newborns where an exchange transfusion is needed, one unit of blood may be all that is required.

For children who are very anaemic and need a transfusion, one unit of blood may be all that is required, and may very well raise the haemoglobin several grams and there would be no further need of transfusing extra units of blood.

Most physicians that I come into contact with appear to know the danger inherent with the misuse of transfusions and where they do not, it is probably due to lack of emphasis being placed in this area by the pathologist and the laboratory.

I do not believe in the use of blood transfusions when it is not necessary or when the reason for transfusion is not justifiable. I believe we should be more aware of this when transfusions are given unnecessarily.

As for the one unit transfusion, I believe that there is often a good case for it being used. We should be looking into other areas, such as when two, three or

four units of blood are given to a patient with anaemia when alternative treatment is available without the dangers that is always present when transfusion of blood takes place.

Submitted by:
Truman Ralph
Newfoundland

Mr Ralph is a technologist with the Central Newfoundland Hospital in Grand Falls, Newfoundland.

The Editorial staff of the C.A.I.H. NEWSLETTER also received a letter from Sister Mary Cornelia, who originally proposed the question on one unit transfusions. Sister Cornelia had also written to the American Association of Blood Banks (AABB) on this subject, and enclosed a reply from the chairman of the Technical Manual Committee. Part of that letter is given below:

You are certainly correct to be concerned about patients who receive unnecessary blood, to avoid increasing the statistics on 'single-unit' transfusions. It is in part for this very reason that accrediting agencies are now placing much less stress on the single-unit transfusion. The important issue, of course, is that patients who need blood receive enough of it, and that transfusions not be given to those who don't require blood. When there is evidence that transfusion policy is under continuous surveillance, there is no need to set up a special category of

'single-unit' transfusions.

The best approach to this is to have an active transfusion committee that reviews all, or selected, transfusions. Many transfusion review policies single out categories for special consideration, including use of specified components. An excellent approach to blood usage in surgical procedures is to assemble data on transfusion experience in various specific procedures. If the blood bank and surgical service determine the usual blood needs for specific procedures, it becomes possible to identify whether individual physicians or particular groups of patients depart significantly from the norm. In such circumstances, the transfusion committee, or the blood bank director and the chief of surgery, can focus their inquiries on areas that provoke particular concern.

Our thanks to Sister Mary Cornelia for her question.

QUESTION OF THE MONTH:

For those hospitals who are involved in preparing blood for cardiac patients (i.e. pumps) would it be practical or useful to use auto transfusion in these cases? What would the problems be? And would there be any benefits? Please comment by writing:

QUESTION OF THE MONTH
NEWSLETTER
C.A.I.H.
P.O.Box 5358
Station A
TORONTO, M5W 1N6

COMMENT

The C.A.I.H. notes with interest that the Canadian Society of Laboratory Technologists (C.S.L.T.) has approved changes in the examination requirements for advanced (A.R.T.) certification and the schedule for all advanced (A.R.T. and L.C.S.L.T.) examinations. For those C.A.I.H. members who did not see the notice in the Canadian Journal of Medical Technology, 41:1979, the C.S.L.T. has decided to offer written examinations as an option for advanced (A.R.T.) examinations - that is, the candidate may choose to proceed either by Technical Report and oral examination OR by written examination and oral examination.

The A.R.T.(General) as it is now being offered will be discontinued, and this will be superseded by a new A.R.T. in General Medical Technology to be introduced in 1980. The C.S.L.T. reports that the Syllabus of Studies will be available after the convention meetings, and will focus on the technology of the general certificate with applications involving technical supervision, trouble-shooting, method evaluation and selection, and efficient management of a laboratory. The major thrust of the examination will be toward problem-solving questions.

The C.A.I.H. is interested in reaction from its members to this change.

CAN WE HELP?

If any members of C.A.I.H. are at present preparing technical reports or papers for C.S.L.T. that they would like to have read and evaluated before submitting them to the C.S.L.T., perhaps we could be of help. If you send a copy (DO NOT SEND ORIGINALS) of your paper, we will arrange to have it read by an expert in the field, and will send you his/her comments. Please note that the C.A.I.H. will not re-write the paper or offer specific change suggestions unless these are glaring, but will rather offer a general appraisal of the paper, and general suggestions as to how it can be im-

proved (if indeed it needs to be improved at all).

This programme of the C.A.I.H. is a way in which we can be of direct help to our members, and we hope that many of you will take advantage of it.

Send papers to:

EVALUATION
CANADIAN ASSOCIATION OF
IMMUNOHEMATOLOGISTS
P.O.Box 5358,
Station 'A'
TORONTO, ONTARIO
M5W 1N6

MAILBAG

Dear Sir,

We here in the blood bank are very often frustrated by the lack of knowledge the majority of medical staff have of blood antigens and antibodies, even the pathologists are not all trained extensively in this area. Here we really have to prove and substantiate every report we submit.

(Is this a common problem?)

This letter has been shortened.

Dear Sir,

We are involved in collecting saliva for secretor status tests, and often have to collect specimens from babies. Can you suggest the best way to do this?

S. Hynes
Ontario

Dear Ms Hynes,
Race and Sanger (1975 edition of BLOOD GROUPS IN MAN) suggest that a very small cotton wool swab held in Spencer-Wells forceps can conveniently be used to absorb saliva from a baby's mouth. The wet swab is then squeezed by the forceps, and the drops expressed into a small tube. These authors caution that if the swab is too large, the squeezing simply forces the saliva into another part of the swab, but assure us that, with patience, neat saliva can often be collected. If

this is not achieved, the wet swab can be squeezed in 0.5cc of saline.

Dear Sir,

I would like to congratulate the C.A.I.H. on the excellent work that you are doing for blood bankers in Canada. We have long needed just such an organization, and I am delighted that you have had the courage to start it. I wish you every success in your venture, and pledge my full support to the aims of the association.

I would also like to say how pleased I was with the last Newsletter (March April, 1979). I would go so far as to say that it is the best Newsletter that I have ever encountered from any organization of this nature.

Signed:
G.R.Turner

The Editorial Staff is happy to receive letters from members and non-members of C.A.I.H. Comments regarding the work of the Association are helpful and encouraging, and continually assure us that we are 'on the right track' Please send letters to:

*The Editor,
CAIH Newsletter
P.O.Box 5358
Station A
TORONTO, ONTARIO
M5W 1N6*

JOB OPPORTUNITIES

Once again this page remains blank. If there are any jobs available in your area, the CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS would appreciate hearing about them.

CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS

P.O.Box 5358, Station A TORONTO M5W 1N6



NEWSLETTER

VOL 1 No 5

THE D^u PROBLEM REVISITED

In a recent issue of the C.A.I.H. NEWSLETTER, we addressed the problem of D^u from the aspect of how it should be reported, and stressed the need for consistency. In that article, it was suggested that perhaps D^u typing was for the most part, unnecessary. In this article, we would like to take that problem one step further by looking at the implications of NOT doing D^u tests on various sample categories.

At a shallow but convenient level, we can show three basic instances where blood grouping is performed:

1. DONATION: This includes blood donation for transfusion, for component therapy etc.
2. PRETRANSFUSION: This includes routine and emergency crossmatching, group and screen etc
3. PRENATAL.

As will be obvious, in examining the implications of not doing D^u tests, we are, in effect, examining the possible adverse effects of calling a D^u-positive sample D^u-negative, and in that we must examine each category independently.

DONATION: If D^u typing is not performed on blood donations, there is, of course, the chance that the recipient of a wrongly classified unit would be immu-

nized. The chance of this happening, however, is extremely rare, since the D^u antigen has very little antigenic potency. Experiments performed by Schmidt *et al* and others have repeatedly shown that in the vast majority of cases, anti-D is not developed by the recipients. While it is true that the donation could elicit a secondary response, the chance of this happening is more rare than the production of anti-D in D-positive individuals. It is also possible that a D^u positive unit when transfused to a D-negative recipient may react with a pre-formed anti-D in the recipient, but this would almost certainly show itself in pre-transfusion tests.

PRETRANSFUSION: If D^u testing is not performed in pretransfusion tests, no difficulty will be experienced, since the recipient will receive D-negative blood.

PRENATAL: If D^u testing is not performed on prenatal specimens, again no harmful effects will result. In fact it has been reported by Gorman that D^u-positive women can safely receive Rh immune globulin.

The effects of not performing D^u tests can therefore be considered minimal. Problems, however do arise

in cases where a D-negative sample is wrongly classified as D-positive, as follows:

DONATION: In blood donations, the effects would be minimal, and quite harmless to the recipient. Of course, fewer Rh-negative units would be available, but this is of minor importance.

PRETRANSFUSION: If a D-negative unit is wrongly classified as D^u positive, the patient would receive (in effect) Rh-positive blood, which would result in a chance of becoming immunized.

PRENATAL: In prenatal cases, the presence of anti-D might not be detected during pregnancy. Again, the patient would be transfused with Rh-positive blood (discussed above) - and it is possible (though improbable) that the patient would be denied Rh immune globulin.

As can be seen from this discussion, the only harmful effects in cases where a D-negative sample is wrongly classified as D^u-positive occurs in pre-transfusion and prenatal patients. The significance of this, is, of course, a matter of opinion.

COMMENTS ARE INVITED ON THE ABOVE ARTICLE

MEETINGS OF INTEREST

On Thursday, October 25th, 1979, the ONTARIO ANTIBODY CLUB will present Dr Philip F Halloran of Toronto on the subject "Immunology in kidney transplantation." The meeting will be held in the Auditorium at the Toronto General Hospital, and is open to all those interested in Immunohematology.

The ONTARIO ANTIBODY CLUB will also present Dr Philip F Hall of Toronto on Thursday, November 15th at the Toronto General Hospital Auditorium. Dr Hall's subject will be "Fetoscopy; a new antenatal diagnostic technique" - and a film will be shown. Both of these meetings will be held at 7.00 in the evening.

From November 3rd to Nov 8th, the Annual Meeting of the American Association of Blood Banks (AABB) will be held in Las Vegas, Nevada. Information can be obtained from the AABB National Office, Suite 608, 1828 L Street, N.W., Washington, D.C. 20036.

The international Society of Blood Transfusion will hold a symposium in Warsaw, Poland from November 23rd-24th. Information can be obtained from Congress Bureau, 00-950, Warsaw.

And from August 18th-22nd, 1980, the joint congress of the American Society of Hematology and the International Society of Blood Transfusion will be held in Montreal, Quebec. Information can be obtained by writing ISH/ISBT Congress Montreal, 772 Sherbrooke Street West, MONTREAL, Quebec, H3A 1G1. We would certainly encourage all of our members to attend this congress, since it is not often that ISBT holds its meeting in Canada, and therefore presents a unique opportunity for all of us.

THE LECTURE PROGRAMMEMESSAGE FROM THE DIRECTOR
EDUCATIONAL SERVICES

Co-ordinators Maureen Webb (C.A.I.H.) and Robin Walsh (Canlab) organized a very successful C.A.I.H.-Canlab workshop in Edmonton, Alberta on April 25, 26, 1979. The C.S.L.T. granted 2.6 credits to the participants.

A Dade-C.A.I.H. workshop will be held on October 24-26, 1979 at the Toronto Institute of Medical Technology, Ontario. The topics include: Lectins in Immunohematology, The Application of Blood Tests in Paternity testing, Liss, A.I.H.A. from the Clinician's viewpoint, and Testing with Anti-Human Serums. The lecturers are Carol Albietz (Dade), Bruce Clinton (Dade), Elizabeth Kenimer (Dade), Neville Bryant (C.A.I.H.) and John Freedman (Toronto).

A General Diagnostics-C.A.I.H. seminar will be presented by Faye Sideen on October 12th, 1979 at the Newfoundland Branch C.S.L.T. Convention.

I am pleased to welcome Bonnie Peterson to the Educational Services as the Provincial Director for Manitoba.

Denis Paradis, Quebec's Education Provincial Director has returned to the U.S.A., and a new Provincial Director will be appointed soon.

LINDA SHANAHAN
Director of Educational Services

ORTHO DIAGNOSTICS - C.A.I.H.
POST GRADUATE COURSE IN IMMUNOHEMATOLOGY

A POST GRADUATE COURSE IN IMMUNOHEMATOLOGY IS TO BE HELD IN EDMONTON, ALBERTA ON NOVEMBER 27th and 28th, 1979. The course is open to all interested individuals. The seminar will deal with the following:

1. A systematic approach to solving laboratory technical problems
2. Recent developments in the field.

For information about the course, please contact PAT STILES, Ortho Diagnostics, 19, Green Belt Drive, DON MILLS, ONTARIO

IMMUNOHEMATOLOGY WORKSHOP
JOINTLY SPONSERED BY
DADE and C.A.I.H.
October 24-26th, 1979

The Immunohematology workshop will be conducted at the TORONTO INSTITUTE OF MEDICAL TECHNOLOGY, Classroom 325, 222 St Patricks Street, Toronto, Ont. The workshop is designed for supervisor or ART technologists and physicians with a primary interest in immunohematology. Participation in the entire programme is limited to 24 persons by pre-registration only. Participation in the lecture programme only will be limited to 50 participants.

The following lectures will be given

LECTINS IN IMMUNOHEMATOLOGY

Carol Albietz, MT (ASCP) SBB

One application of lectins in immunohematology is in the recognition of elucidation of red cell polyagglutination. The discussion will include a review of polyagglutinable cells as well as the lectins useful as blood grouping reagents.

THE APPLICATION OF BLOOD TESTS
IN PATERNITY TESTING

Neville J Bryant, A.R.T., F.A.C.B.S.

In this session, the history, genetics and nomenclature of the various blood factors will be considered. Current methods of testing for white cell antigens will be evaluated relative to error rate, reliability, and reproducibility. While cell typing will be compared to testing for other cell and/or serum globulin genetic markers in its usefulness for the determination of chance of paternity exclusion.

LISS

Bruce A Clinton, Ph.D

Methods utilizing low ionic strength solutions (LISS) have recently been rediscovered by practitioners of immunohematology. An overview of LISS, including the history of its development and a comparison of its use with conventional techniques will be presented.

A.I.H.A. FROM THE CLINICIAN'S
VIEWPOINT

John J Freedman, M.D.

This review will encompass a discussion of the etiology, clinical manifestations, pathophysiology, and treatment of autoimmune hemolytic anemia.

TESTING WITH ANTI-HUMAN SERUMS

Elizabeth Kenimer, M.S., MT(ASCP)

An overview of the theory of the action, manufacture and specificities of the anti-human serums as well as the indications for their use in common vs. specialized blood bank testing will be discussed. Since the need for anticomplement activity in anti-human serum is being questioned, information will be presented expressing contrasting viewpoints on the necessity of anticomplement activity, and the safety and practicality if the incorporation of oligospecific anti-IgG in the crossmatch.

In addition to these lectures, there will be a panel discussion on current topics, and the laboratory sessions will include LISS and the Preparation of Eluates.

This workshop-seminar promises to be extremely interesting to all those involved in immunohematology, and the NEWSLETTER will present in the next issue, some information about the various topics as discussed.

IMMUNOHEMATOLOGY COURSES OF INTEREST TO C.A.I.H. MEMBERS

THE DIVISION OF CONTINUING EDUCATION AT THE TORONTO INSTITUTE OF MEDICAL TECHNOLOGY PRESENTS A NUMBER OF COURSES IN IMMUNOHEMATOLOGY. THE NEWSLETTER IS MAKING INFORMATION AVAILABLE ABOUT THESE COURSES FOR THE INTEREST OF ITS MEMBERS, AND ALSO PERHAPS TO OFFER IDEAS TO INDIVIDUALS IN OTHER AREAS OF THE KIND OF COURSES THAN CAN BE ARRANGED. INFORMATION ON THESE COURSES CAN BE OBTAINED FROM THE TORONTO INSTITUTE OF MEDICAL TECHNOLOGY, DIVISION OF CONTINUING EDUCATION, 222 St PATRICKS STREET, TORONTO, M5T 1V4

BASIC IMMUNOHEMATOLOGY

This course is designed mainly for people who are working part-time or those on a rotation basis in the blood bank department. The objectives of the course are to review problems that may arise in this department, to provide suggestions on how to solve these problems and to update student's knowledge on the various techniques and on the components of blood available for the patient. An evening will also be scheduled to discuss problems that students have encountered while working in the blood bank.

THE DAY OF THE CHILD IN THE YEAR OF THE CHILD

This seminar is designed for technologists at an intermediate or advanced level working in immunohematology and may also be of interest to interns and residents. The objectives are to acquaint technologists with current theory and practice of pediatric transfusion therapy, and with current aspects of prevention, diagnosis and management of hemolytic disease of the newborn. Each lecture session will be followed by a question period.

ADVANCES IN TRANSFUSION

This one and a half day seminar is designed for Blood Bank Technologists, preferably those with two years post R.T. experience and may also be of interest to intravenous nurses. The objectives are to update knowledge of physiologic processors related to transfusion, to update knowledge on blood components and fractions, and acquaint hospital personnel with the activities of a regional transfusion centre through group tours and to explore new directions i.e. therapeutic plasmapheresis.

ATTENTION: BLOOD BANKERS



THE CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS
IN CO-OPERATION WITH THE
IMMUNOHEMATOLOGY SCIENTIFIC PROGRAM COMMITTEE
1980 CSLT NATIONAL CONVENTION, EDMONTON, ALBERTA

Present, a

TECHNICAL REPORT CONTEST

Place: Edmonton, Alberta

Date: June 25th, 1980

- Rules:
1. Presentation to be on any technical topic of current interest in Immunohematology, eg., a case study, development of a new technique, modification of an existing technique, research project, etc.
 2. The material presented must be based on work done by the entrant.
 3. Length to be 15-20 minutes, with an additional 5-10 minutes allotted for questions.
 4. Contest to be judged by a national panel of judges.
 5. Prize donated by the CAIH to the winning contestant.
 6. CSLT credits available upon request.

For further information contact: Mrs. Pat Letendre
Acting Immunohematology Chairman
1980 CSLT Convention
B-117 Clinical Sciences Building
University of Alberta
Edmonton, Alberta T6C 2G3

REACTION

The Editor
C.A.I.H. NEWSLETTER

Dear Sir,

In recent newsletters there was a discussion on the "D^u issue" and also the use of Rh immune globulin in D^u individuals. We wish to relate how we have approached these problems in Hamilton, as our approach may be of some use to others. With regards to D^u testing, a meeting was held with representatives of all the Blood Banks in the Hamilton area, along with representatives from the Hamilton Centre of the Canadian Red Cross Blood Transfusion Service. It was agreed at this meeting that a standard policy for D^u testing be formulated in an attempt to avoid the conflicting reports that might occur as a result of someone being D^u.

The following policy was unanimously agreed upon:

1. All patients will be classified as Rh negative if they fail to react with an incomplete anti-D sera on immediate spin.
2. All patients will be classified as D^u if they reacted with the same incomplete anti-D after incubation of 37°.
3. A D^u test would no longer be routinely done on hospital patients, prenatal women or rr blood donors.
4. A known D^u person would be classified as Rh positive of the D^u type.
5. Rh negative babies of Rh negative

mothers must still be Du tested in

consideration of the need of Rh immune globulin.

This policy was instituted and has been in effect for approximately six months.

With regard to the use of Rh immune globulin for D^u mothers, all D^u mothers are likely to be considered for administration of Rh immune globulin, they would be managed as Rh negative pregnancies. Women who are known to be D^{u+} have been considered by us to be Rh negative because of the theoretical possibility that such individuals may be immunized to anti-D by a pregnancy. This matter was discussed at a recent conference on the Prevention of Rh Immunization(1). At that meeting priorities for the use of anti-D were enumerated and one of the seven recommendations made was that a case can be made for giving anti-D to some D^u individuals. Admittedly the data is very soft with regard to whether such an approach is efficacious. Nonetheless, we have adopted the approach that D^u individuals be regarded as Rh negative for the purposes of administration of Rh immune globulin. It is important to remember that occasionally an Rh negative patient will give a positive D^u test when there is a large fetal/maternal bleed.

Thus, The McMaster Conference recommended that whenever anti-D is given to prevent Rh sensitization, a screening test be performed to detect large transplacental hemorrhage.

SHEILA FERGUSON, A.R.T.
M.A.BLAJCHMAN, M.D., F.R.C.P.(C)

MS FERGUSON AND DR BLAJCHMAN ARE FROM
THE HAMILTON CENTRE OF THE CANADIAN
RED CROSS.

REFERENCE

1. Davey, MG and Zipursky, A. McMaster Conference on the Prevention of Rh Immunization, 1977, Vox Sanguinis, 36: 50-64 (1979)

The Editor
C.A.I.H. Newsletter

Dear Editor,

The editorial in the July-August issue of the NEWSLETTER contained several statements in reference to the use of Low Ionic Strength Solution (LISS) that can certainly be questioned.

In the past few years, experiences with generic formulations, both commercially obtained and 'home made' have supported the claims of published reports that antibodies 'found' or enhanced by LISS have outweighed those, perhaps 'missed'. Documentation is available for the discovery of routinely undetected examples of Kidd^a, and Rh system antibodies C, E, c and e. Other examples of Kidd^b, Duffy^a, D, M, N and Kell have shown greater uptake by LISS suspended red cells.

These are potentially dangerous anti-

bodies whose detection, I believe, is more important than the time advantage that LISS also affords.

No blood bank technique for antibody detection is perfect. A blood bank laboratory, however, rarely performs more than one method, time, or temperature studies as a routine procedure, although we know the clinical significance of these to antibody identification.

Lower temperature IgM antibodies may or may not be adsorbed by LISS suspended red cells. Kell and Lewis IgM antibodies, therefore, may not be observed or enhanced. We have had a case reported to us that an IgM Kell 'missed' by LISS did not destroy Kell positive cells *in vivo* (personal communication, reference upon request).

New-to-LISS users should be aware that this is a technique that requires precision, not usually necessary in standard blood bank serology, in order that the optimum ionic strength is achieved. The LISS is basically a saline solution, therefore, is not a red cell preservative. Prolonged storage of antibody screening cells in the saline solution may be responsible for some of the 'missed' antibodies referred to in the editorial.

As Immunohematologists, we should cause change to occur in our field and welcome tools that will expand the versatility of our technology.

LISS is one of the better methods that has been proven to promote sensitive, rapid antibody analysis. For the patient, a LISS screen and crossmatch will provide additional assurances not obtainable by saline, bovine

albumin or enzyme tests applied singly. LISS cannot be evaluated casually, or ignored.

JULIA M MANN, M.S., M.T.(ASCP)SBB
Groton, Connecticut

*JULIA MANN IS HEAD OF THE CONSULTATION
SERVICES AT PFIZER DIAGNOSTICS*

The Editor
C.A.I.H. Newsletter

Dear Sir,
In reply to Denis Hickey's letter in the July-August issue of the C.A.I.H. NEWSLETTER, we would like to relate our experience in dealing with positive direct antiglobulin tests due to Aldomet therapy.

From November, 1978 to April, 1979, we encountered four patients with 4+ positive direct antiglobulin tests with anti-IgG, and free antibody in the serum. Two of these cases involved Aldomet therapy. In all four cases both serum and eluate showed 2+ and 3+ reactions in the antiglobulin phase with no apparent antibody specificity. The following method was employed for compatibility testing:

Twenty ml. of blood was collected in EDTA and the red cells washed twice with warm saline (48°C). An auto elution was then performed at a temperature of 47°C-49°C. An equal volume of 6% albumin was added to the washed packed cells and the mixture incubated for 10 minutes, agitating every 2-3 minutes. This was repeated 2-3 times, washing twice after each

elution to remove hemolysis. At this point the direct antiglobulin test was 2+ or weaker. (It is almost impossible to elute all the antibody from the cells at this temperature). The eluted cells were enzyme treated with papain and divided into two tubes. Two auto absorptions (using the patient's eluted cells and the patient's serum) were performed at 37°C for 1 hour each. Antibody identification and compatibility testing were repeated with the absorbed serum.

Using this method we were able to remove the auto-antibody and demonstrate the presence of allo-antibody (in one case allo-anti-E and in another, anti-Kell). The compatibility tests showed no reaction with donor cells where no allo-antibody was present.

In conclusion, of the two patients on aldomet therapy, one received 7 units of packed cells and the other was not transfused. Of the two other cases one received 3 units and one 4 units. All transfused cells were tolerated with no transfusion reactions.

The method should only be used when patients have not been recently transfused. Where applicable, we suggest that enough absorbed serum be saved and frozen to perform compatibility tests in the event of the need for transfusion in the near future.

BLOOD BANK STAFF
CALGARY GENERAL HOSPITAL
CALGARY, ALBERTA.

The Editor
C.A.I.H. Newsletter

Dear Sir,

We are acting as a leftist group in that we have been using Low Ionic Salt Saline or LISS for five years now. We are still making the reagent ourselves, adding a preservative and storing at room temperature for three to four months. We have not encountered the problems of 'false positives', stability or lack of sensitivity thought to be associated with its use. We are using a ten minute incubation period for routine work and five minutes for urgent requests. The LISS procedure is adapted to antibody screening as well as compatibility testing. Generally speaking, there seems no enhancement of IgM antibodies with LISS although these antisera are still detected with five minutes incubation. However, we have found enhancement with anti-M and some Lewis antibodies with a LISS technique, the latter group being detected by an indirect antiglobulin test. As for the IgG antibodies, we have found enhancement with almost all systems tested except, perhaps, the Kell system which has shown only slight loss of reactivity in a low ionic environment. These again are still being readily detected with a five minute incubation period. The Duffy antisera which we studied in parallel did not show any loss of reactivity with LISS but tended to be also enhanced. The Rh antibodies reacted most impressively on a comparative basis when using LISS.

Reading antiglobulin tests microscopically is optional with LISS as we have seen but one example (IgM) that required such reading. This could be contrasted with a fifteen minute standard 'stat' procedure, when one would certainly want to read microscopically.

We are obvious advocates of the use of LISS as we feel it to be a safe, effective and superior reagent for antigen-antibody reaction testing

JOHN CHISHOLM, A.R.T
Cornwall, Ontario

*MR CHISHOLM IS THE CHARGE TECHNOLOGIST
AT THE HOTEL DIEU HOSPITAL IN
CORNWALL, ONTARIO*

The NEWSLETTER is most grateful to those people who have contributed material to this publication, and to others, and would like to encourage others to do the same. We realize, of course, that sometimes you may have a particular concern that you would like to obtain reaction on, yet are worried that by saying what is on your mind, you may jepopardize your position or your reputation. For this reason, and since we firmly feel that you have a RIGHT to your opinion, the NEWSLETTER will withhold the names of contributors if this is requested, and will not divulge the identity of the author to anyone for any reason.

With this in mind, we hope that you will be encouraged to 'speak your mind' understanding that your concerns may also be the concerns of others.

bi-laws until we have the official recognition of government.

MEMBERSHIP

Our membership is fast approaching 300. A press release that was sent to the CSLT was published in their most recent BULLITIN, and has met with great response. So we are hoping that before long we will have reached all the blood bankers in Canada, and will have a good percentage of them as members. If you can help by encouraging people to join the association, we would appreciate it.

NEWS BRIEFS

OUR CHARTER

The Legal World, being what it is, has still not come through with our charter - and a recent letter received by the C.A.I.H. stated once again that the Government was concerned about the use of the name CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS, fearing that the Canadian Hematology Society might object. We had earlier written to the Canadian Hematology Society asking for their release on our chosen name, and this they did - however this has not satisfied the Government, since the letter that we received did not have the official seal of the Canadian Hematology Society affixed. We have since written again to the C.H.A. asking them to provide us with another letter (with the seal attached) - and hope that once this is received, we can proceed with the incorporation of our association.

For those members who have requested copies of the Bi-laws, we would ask you to be patient, since we cannot release copies of the

SUBMISSIONS TO THE NEWSLETTER

The NEWSLETTER would be happy to receive submissions in the following areas:

1. Lead Article (On any subject that is of interest to Immunohematologists - preferably technical, but not necessarily so.
2. Details about meetings, seminars or workshops in your area.
3. Letters discussing areas dealt with in the NEWSLETTER - both in this issue, and in previous issues.
4. Letters containing questions for the C.A.I.H panel of experts.

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QUESTIONS AND ANSWERS;

A telephone request from one of our members in Ottawa asked for information about Platelet Survival systems using Invium. Invium is used in the U.S.A., yet we do not know of anyone in Canada who is using it. If you have any information, or know of anyone who is using Invium in this respect, please write.

JOB OPPORTUNITIES

IF THERE ARE ANY OPENINGS IN YOUR LABORATORY, WE WOULD APPRECIATE HEARING ABOUT THEM. ANY OTHER JOBS THAT MIGHT BE AVAILABLE IN ANY AREA PERTAINING TO IMMUNOHEMATOLOGY WILL BE AVERTIZED HERE ALSO. THERE IS NO CHARGE FOR THIS SERVICE.

CANADIAN ASSOCIATION OF IMMUNOHEMATOLOGISTS

P.O. BOX 5358, STATION 'A' TORONTO M5W 1N6