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Transfusion requests – zero tolerance

A set of new standards for transfusion request forms and sample labelling was introduced Australia-wide effective October 1, 2008 (request IMVS form 3220).

The IMVS, in common with all pathology providers, is required to take a ‘zero tolerance’ approach to errors and omissions in order to fulfil its obligations not only to the accreditation bodies, but importantly, to patients.

From January 1st 2009, requests and samples received by a laboratory with incomplete or illegible information cannot be processed. These samples and request forms will be discarded; new samples must be collected and sent with a new request form.

The new standards affect all pre-transfusion requests; all antenatal and peri natal serology; all cord blood serology and all pathology providers.

The implementation of these standards will affect how you make a transfusion request and label your patient specimens. The changes cover three areas, the request form, sample labelling and collection timing (see IMVS Newsletter 69).

In some instances the new standards may require a change within your medical practice.

If you would like to discuss the standards in more detail, please do not hesitate to contact IMVS Transfusion via the Call Centre on 8222 3000.

POCT rollout

The IMVS is pleased to announce two new Point of Care Testing (POCT) services at Tumby Bay and Cleve District Hospitals on Eyre Peninsula. Crucially these new services are supported via online connections to IMVS.

Installed in the Emergency Department of the Tumby Bay Hospital in October the i-Stat analyser allows urgent test requests for blood gases, biochemistry and haemoglobin to be undertaken on site. Fifteen nursing staff, including the Director of Nursing, received their training and certification from IMVS POCT Manager Graeme Brettig and Richard Ryan, Manager of the IMVS Port Lincoln Laboratory.

The Tumby Bay service is supported by the IMVS laboratory in Port Lincoln which also manages similar POCT services both locally, and at Cummins Hospital.

Equidistant from Whyalla and Port Lincoln, specimens from the Cleve District Hospital previously travelled 145 kms by bus to an IMVS laboratory. Urgent tests are now handled on site in minutes.

* Signature required
IMVS staff Anthony Critchley (Laboratory Manager) and Amanda from Whyalla helped establish the new service, and our special thanks to Cathy Giersch (Executive Officer and Director of Nursing), and Nurse Manager Margaret McDonall-Ashe at the Cleve hospital who provided invaluable assistance.

FOBT test changes
From March 1, 2009, the chemical analysis for faecal occult blood will no longer be performed routinely at the IMVS. Immunological analysis for intact human haemoglobin, specific for lower bowel cancer will continue to be performed and reported as a positive or negative result. The test is funded by Medicare. Chemical analysis will be by request only.

FNA Clinic relocated
In response to changes in demand for Fine Needle Aspirations (FNA) the IMVS has relocated its Noarlunga FNA service to the Patient Centre located at Flinders Private Hospital.

The new service has expanded hours of operation.

Opening times
Monday to Friday 1:30pm – 3:30pm
Patient Centre, Ground Floor, Flinders Private Hospital
Patient parking is available at Flinders Private Hospital or in the Flinders Medical Centre car park.
To make an appointment please phone 8204 4415.

Further information
If you require additional information or maps please phone the IMVS Call Centre on 8222 3000.

α thalassaemia trait
The IMVS uses both CBE and HPLC (High Performance Liquid Chromatography) as primary ‘screening’ tools for haemoglobinopathies.

A microcytic/hypochromic blood film with normal iron levels and a normal HbA2 (1.8 – 3.4%) is considered indicative of alpha thalassaemia trait. This is a ‘presumptive’ diagnosis. If the patient is asymptomatic (typical), molecular studies of haemoglobin genes will not be routinely performed. However where both adult partners may be affected and are therefore at risk of an affected foetus/child, molecular studies should be requested.

The detection of alpha gene mutations are important only if the partner/spouse may be similarly affected. Definitive molecular diagnosis is warranted in these circumstances in order to provide appropriate genetic counselling (see page 10).

LADA correction
An alert reader has drawn our attention to an editing error in the LADA article (Issue 70). The last paragraph on page 8 should read:
“‘The key feature of patients with T1D and LADA is the presence of autoantibodies against pancreatic islet cells. T1D is characterised by the presence of two or more autoantibodies to glutamic acid dehydrogenase (GAD), insulinoma-associated antigen (IA-2) and insulin. By contrast patients with LADA typically test positive to GAD antibodies only (Table 1). Negative GAD and IA-2 antibody results in diabetic patients are consistent with T2D.’”

We are always pleased to receive correspondence from readers and welcome the opportunity to clarify our article.

It seems everyone in South Australia was engaged by the Tour Down Under in January – including the IMVS.

Approached by the Anti-Doping Services of the UCI (International Cycling Union) the IMVS was pleased to support the Tour by conducting blood tests in compliance with international standards.

The analysis involved a Complete Blood Examination (CBE with extended red cell profile) on each of the participating athletes prior to and during the event. The tests were completed in accordance with the UCI’s Biological Passport program, introduced at the Tour Down Under last year, which is recognised as being at the leading edge of anti-doping initiatives.

Testing commenced five days prior to the event and continued throughout. A total of 134 athletes were tested with specimens subject to strict chain of custody protocols.

Analogous blood testing was performed for both the Anti-Doping Science Institute of Los Angeles and the Australian Institute of Sport (AIS). The AIS study involved only the Australian cyclists riding as part of the UniSA team and it focused specifically on both the haematological and total haemoglobin mass (CO re-breathing test) response to a six day stage race.

In addition to testing professional cyclists, the study also included a control group to isolate the effects of racing from the effects of living in warm conditions. It was hoped that the data derived from this study may have an influence on blood testing programs conducted in the future.

Just a reminder that all past IMVS Newsletter issues are available on our web site, www.imvs.sa.gov.au.
Interpreting Results

Dr Bob Heddle

In the last issue we discussed best practice for allergen selection and we now turn to result interpretation. Investigation of allergy is an important part of clinical practice. Allergy testing helps patient management by establishing a diagnosis of atopy and identifying the underlying allergens, thus allowing appropriate patient tailored treatment.

Interpretation

Laboratory testing for allergy measures specific IgE (sIgE) to allergens in serum. The results are reported as both quantitative (kU/L concentration) and semi-quantitative (class 0–6) values. There are no ‘normal’ reference ranges. The presence of any detectable sIgE in the serum indicates sensitisation to the allergen with the likelihood of clinical allergy increasing with increasing concentration of sIgE.

A positive result to a particular allergen indicates sensitisation but does not establish that the allergen contributes to the clinical problem(s). Sensitisation with a corroborative clinical history indicates that it is likely to be the causative allergen, however a positive result in isolation without supporting clinical history does not necessarily mean the patient will react to that allergen if challenged.

All positive (and equivocal) results for mixed allergen testing should be followed up with single allergen testing to identify the specific allergen. Use of mixes can lead to under-estimation of reactivity to a specific component. It is also important to note that a positive result to a mix means that there is sIgE to at least one component of the mix.

At best an sIgE test has a sensitivity and specificity of up to 95% and 94% respectively but with some allergens such as latex and penicillin, false negative rates of up to 40% have been reported. For this reason results must always be interpreted in conjunction with the patient’s clinical history.

Clinical significance

Inhalant allergy

Recent studies have confirmed that a positive sIgE result to house dust mite correlates with clinical sensitivity. Likewise positive sIgE to cat dander correlates to positive challenge results.
Table 1  Predictive value of sIgE in children*

<table>
<thead>
<tr>
<th>Allergen</th>
<th>Decision point (kU/L)</th>
<th>Positive predictive value (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg</td>
<td>7</td>
<td>98</td>
</tr>
<tr>
<td>- Infants ≤ 2 years</td>
<td>2</td>
<td>95</td>
</tr>
<tr>
<td>Milk</td>
<td>15</td>
<td>95</td>
</tr>
<tr>
<td>- Infants ≤ 2 years</td>
<td>5</td>
<td>95</td>
</tr>
<tr>
<td>Peanut</td>
<td>14</td>
<td>100</td>
</tr>
<tr>
<td>Fish</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Wheat</td>
<td>26</td>
<td>74</td>
</tr>
<tr>
<td>Soybean</td>
<td>30</td>
<td>73</td>
</tr>
<tr>
<td>Tree nuts</td>
<td>15</td>
<td>95</td>
</tr>
</tbody>
</table>

* Lower values do not exclude a risk of severe anaphylaxis on ingesting food.

**Food Allergy**

A number of studies in children have determined the level of sIgE to various foods above which patients have a greater than 95% risk of reacting if challenged. If patients are sIgE positive above these levels for particular foods (see table 1) then the probability of reacting is so high that challenge or other testing is not necessary for confirmation. At lower levels confirmatory testing is still required. In so far as potential reactions include anaphylaxis, such testing should be performed by personnel and circumstances ready to deal with that eventuality.

Currently there are no similar recommendations for adults.

**Stinging Insect Allergy**

sIgE testing is useful in confirming a clinical history of systemic reaction to bee sting. On the basis of a sound clinical history of immediate systemic reaction to bee sting and positive bee venom IgE greater than a class 2 or concentration of 0.7 kU/L, referral for venom immunotherapy should be considered.

False negative results occur with all stinging insects, particularly European wasps (Vespula spp) and native jumper/hopper ants (Myrmecia pilosula).

If the sIgE to suspected venom is negative but patient history is suggestive of an allergic reaction, then the patient should be referred for skin testing by a clinical immunology/allergy specialist.

**Latex Allergy**

sIgE testing in patient with suspected type 1 latex allergy is useful if positive. However a negative result does not exclude the possibility of latex allergy and patients with suspected latex allergy should proceed to skin testing with inhouse or commercial latex extract. This testing leads to immediate generalised reactions in a minority of subjects and should be performed by a specialist experienced in the procedure.

**Summary**

- Interpret results with the clinical history; a positive test indicates sensitisation but not necessarily a clinical allergy.
- In children defined levels of IgE specific to certain foods predict positive results to food challenge testing with a high probability hence challenges can often be avoided. Lower sIgE levels do not exclude reactivity but mean further specialist clinical investigation may be indicated.
Allergy busters

**Indoor house plants and flowers cause allergic rhinitis**
Wind-pollinated plants cause more allergies than brightly coloured insect-pollinated flowers. Allergic rhinitis is usually triggered by grass and tree pollens and occasionally by flowers of the daisy family. Occasionally people will complain that scented flowers make them sneeze but this is usually due to chemical irritation from the perfume than pollen. If allowed to age excessively however, decaying indoor plants may act as a source of mould spores.

**Building dust causes allergic rhinitis**
Powdered faecal pellets of house dust mites cause allergies, not dust particles. Some inorganic dusts however such as silica and in particular asbestos can be damaging to the lungs by other mechanisms.

**Dry climates are better for patients with allergies**
Plants causing allergies such as olive trees and some hardy grasses and weeds, thrive in dry semi-desert climates. Occasionally however a patient whose allergies are mainly due to allergens that require a moderately high humidity (e.g. house dust mite and some moulds) may improve in a dry climate. Unfortunately atopic individuals are prone to developing new allergies and often symptoms reappear with exposure to new allergen sources.

**Wheat allergy starting in adulthood is uncommon.**

**People with sinus problems should avoid milk**
Sinus and chest problems are not provoked by milk. Watery mucus secretions may be perceived as being thicker when mixed with milk during meals, and increase awareness of the mucus.

**Exposure to pets can cure allergies**
Early life exposure to pets has variable effects on the development of allergies to airborne allergens but once a person has been sensitised to animal allergens, allergies to animal dander will be provoked by exposure.

**Multiple food allergies are common**
Food allergies are usually highly specific for a limited range of foods.

**Reactions to strawberries and tomato are common in food allergies**
Common food allergies in children are cow’s milk, wheat, egg, fish and peanuts; and in adults fish, shellfish, peanuts and tree nuts. Excesses of strawberries and tomato are capable in some subjects of triggering urticaria by idiosyncratic reactions to natural chemicals in the foods.

**Milk and wheat allergies are common in adults**
Allergy to cow’s milk in children is usually outgrown by age five years. Wheat allergy starting in adulthood is uncommon.

**Antihistamines lose their effect if taken continuously**
Antihistamines can be taken safely over prolonged periods without losing their efficiency.

**Steroid creams cause skin thinning in eczema and should be avoided**
Used in appropriate strengths and schedules these topical treatments are highly effective and safe for eczema. However prolonged use of potent topical corticosteroid creams and ointments can cause skin thinning, particularly in areas such as the face and closed flexures.

Other measures such as use of soap substitutes and skin moisturisers are also important and once flares have been controlled with topical corticosteroids, may go a long way toward controlling the problem.
More known for their deadly attacks on humans, alligators may one day play a role in helping people with diabetes that have foot ulcers.

American researchers from McNesse State University in Louisiana and colleagues from Louisiana State University, have extracted proteins from the blood of alligators which could be used as antibiotics to help fight infection.

Previous studies by the researchers have shown that alligators have a strong immune system, that unlike humans, can fight fungi, bacteria and viruses, without having prior exposure to them.

The study, presented at the 23rd international meeting of the American Chemical Society, found small amounts of disease-fighting white blood cells and active proteins, extracted from American alligators, killed a wide range of bacteria, including superbugs that cause thousands of deaths every year.

“We’re very excited about the potential of these alligator blood proteins as both antibacterial and antifungal agents,” said lead author of study Dr Mark Merchant.

“There’s a real possibility that you could be treated with an alligator blood product one day.” The researchers are now working to identify the exact chemical structures of the antimicrobial proteins and determine which proteins are most effective at killing different microbes. They believe that alligator blood extract may contain at least four promising substances.

This is not the first time an animal has been found to be useful in providing drugs for humans. A South American frog, *Pseudis paradoxa*, has been found to secrete a substance known as pseudin-2 (originally extracted for its anti-microbial activity) which stimulates the release of insulin. A South American reptile, the venomous Gila lizard, is the source of a new drug called Byetta; derived from the lizard’s saliva the synthetic protein is used to improve glucose control in adults with type 2 diabetes. ▲

(Adapted from *American Chemical Society Press Release*)

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**Infections in diabetics**

**Clinical Case**

A 70 year old man, type 2 diabetic with diabetic nephropathy and bilateral moderate sensorineural deafness, presented with a two month history of right ear pain and discharge.

He was treated with repeated courses of topical and oral antibiotics including ciprofloxacin, but symptoms persisted. On examination under anaesthesia, he had evidence of granulation tissue in the right ear. Technetium bone scan demonstrated increased uptake in the right petrous bone and CT scan demonstrated soft tissue infection and osteomyelitis. Deep tissue biopsies demonstrated evidence of chronic inflammation consistent with otitis externa. Culture revealed *P. aeruginosa* which was resistant to ciprofloxacin. The patient then received repeated debridement and a prolonged course of intravenous antipseudomonal penicillin to which he responded. Aminoglycosides were not an appropriate option as a second antibiotic due to the patient’s renal failure and deafness. Ciprofloxacin is the alternative second agent as well as an oral option for ongoing antibiotic therapy however due to the antibiotic resistance of the organism it could not be used.
It has been estimated that 940,000 Australians have diabetes and about half of those are not aware that they have the condition. Diabetes and its complications were responsible for around 8% of the total burden of disease in Australia in 2003.

Patients with diabetes mellitus are predisposed to infections. The risk ratio for diabetic versus nondiabetic persons is 1.21. The risk ratio for infectious disease-related hospitalisation is up to 2.17, and 1.92 for death attributable to infection.

WHO classifies diabetes as a secondary immunodeficiency disease

On this basis the WHO has included diabetes in its classification of secondary immunodeficiency diseases.

Common infections possibly related to diabetes include:
- urinary tract infections
- *Staphylococcus aureus* infections
- soft tissue infections including necrotising fasciitis and Fournier’s gangrene
- synergistic necrotising colitis
- nonclostridial anaerobic cellulitis
- tuberculosis
- fungal infections.

Common infections strongly associated with diabetes:
- mucormycosis
- malignant external otitis
- emphysematous pyelonephritis
- emphysematous cholecystitis.

Infections related to therapeutic interventions in diabetics:
- cardiac pacemaker, defibrillators, penile implants
- organ transplantation
- continuous ambulatory peritoneal dialysis and haemodialysis.

Diabetic foot

Diabetic patients have a 15 times higher rate of lower extremity amputation than nondiabetic patients, more than half are preceded by an infected foot ulcer. Infection was the second most frequent indication (after ischaemia) for diabetic lower extremity amputation.

These infections comprise a spectrum of disorders including paronychia, cellulitis, myositis, abscess, tendonitis, necrotising fascitis, septic arthritis, osteomyelitis and the classic ‘foot ulcer’. The predominant organisms in diabetic foot infections and ulcers are *S. pyogenes* and *S. aureus*. Chronic foot infections are usually polymicrobial with Enterobacteriaceae (coliforms) and *Pseudomonas aeruginosa*. Obligate anaerobes may also infect an ischaemic or gangrenous foot.

The diagnosis is primarily clinical, and microbiologic investigations are limited because organisms isolated from superficial swabs frequently do not reflect the organisms responsible for deeper infection. Studies show that two-thirds of patients with diabetic foot have evidence of osteomyelitis which should be suspected if the:
- soft tissue infection exceeds two weeks
• lesions >2cm wide or deep ulcers >3mm
• bone is exposed or
• ESR >70mm.

In cases of suspected osteomyelitis, MRI is useful for evaluation and surgical planning.

Before therapy
The IMVS strongly recommends that appropriate tissue samples (biopsy, ulcer curettage, exudate from a draining sinus or abscess aspiration) be sent for microbiology, culture and sensitivity before commencing presumptive antibiotic therapy.

cultures from superficial swabs are unhelpful

Antibiotics alone are usually insufficient treatment. Aggressive surgical debridement and limited resection done in a timely manner can prevent more extensive amputation.

Antibiotic choice should be guided by culture and susceptibility test results of the microbes isolated from the site.

Urinary infections
Incomplete bladder emptying due to autonomic neuropathy permits urinary colonisation by microorganisms. In addition, high glucose concentration in the urine promotes the growth of some microorganisms.

Asymptomatic bacteruria is three times more common among diabetic than non-diabetic women. There is however, no difference in the development of symptomatic urinary tract infection (UTI), time to onset of symptoms, pyelonephritis, or the need for hospitalisation; consequently, diabetes is not an indication for the screening or treatment of asymptomatic bacteruria. Fever persisting more than four days after initiation of appropriate antibiotics is a useful indicator of complicated pyelonephritis. The majority of upper UTIs are secondary to ascending infections and usually caused by coliforms. The remainder are caused by haematogenous spread which may originate from S. aureus infection.

Emphysematous pyelonephritis and cystitis (commonly caused by coliforms) are rare but almost exclusive infections of diabetics and carry a grave prognosis with an overall mortality of 30%. Management includes surgical drainage for perinephric abscess or nephrectomy for emphysematous pyelonephritis, along with prompt parenteral antibiotics and supportive treatment.

Respiratory infections
Although it is uncertain whether diabetes is an independent risk factor for pneumonia two patterns of susceptibility are noted.

1. Increased frequency with organisms like S.aureus, gram-negative bacilli and Mycobacterium tuberculosis
2. Increased mortality when caused by pneumococcus and influenza virus.

Diabetes is a risk factor for bacteraemia in patients with pneumococcal pneumonia and is associated with increased mortality hence influenza and pneumococcal vaccines are recommended for all diabetics.

Diabetic patients have a normal response to vaccines.

Influenza and pneumococcal vaccines recommended for all diabetics

Other infections
Various studies demonstrate diabetic patients are at high risk of certain infections, for example:

- Group B Streptococcal bacteraemia
- Klebsiella infections including bacteremia
- Salmonella enteritidis
- M. tuberculosis
- Other infections that occur with increased frequency are:
  - oropharyngeal
  - vulvovaginal
  - cutaneous candidiasis involving the intertrigous areas.

Diabetics are also predisposed to periodontal infection and hence regular dental reviews are recommended.

Unusual infections

Necrotising fascitis
Necrotising fascitis is an uncommon but severe infection with an associated mortality of nearly 40%. The infection starts in the subcutaneous tissue and spreads along fascial planes, commonly located in the arms, legs and abdominal wall. There are two types of infection: type 1 which is polymicrobial (coliforms and anaerobes) commonly seen in diabetics and type 2 which is monomicrobial (S. pyogenes or S. aureus). Fournier’s gangrene is a form of necrotising fascitis involving the male genitalia. Broad spectrum antibiotics and prompt aggressive surgical debridement is the treatment of choice.

Head and neck infections

Necrotising ‘malignant’ external otitis
This is an uncommon but potentially life threatening condition of the external ear and skull (see clinical case). It is commonly caused by P. aeruginosa, occasionally by fungi, and is characterised by unrelenting pain, otorhoea and deafness. Usually there is evidence of cellulitis and oedema of the external ear canal with formation of polypoid granulation tissue. Assessment by a specialist is recommended in these cases.

Rhinocerebral mucormycosis
Approximately 50% of these cases occur in diabetics; ketoacidosis is the most important risk factor. It starts as ocular or facial pain along with nasal stuffiness, with or without discharge, followed by chemosis and proptosis. Necrotic lesions on the palate or nasal mucosa can occur. A black necrotic eschare on the nasal turbinates may be an important clue. Headache and systemic symptoms such as fever are common accompaniments. MRI of the brain is the investigation of choice and again specialist referral is recommended.
**EMPHYSEMATOUS CHEolecystitis**

Although cholecystitis is probably no more common in patients with diabetes than in the general population, severe fulminating infection, especially with gas-forming organisms (coliform and mixed anaerobes) is more common. Visible gas is commonly seen on plain X-ray or CT scan. Prompt cholecystectomy and broad spectrum antibiotic coverage is imperative. Even so, this virulent infection is associated with gangrene, perforation and 15% mortality.

**Infection due to therapy**

Impotence is higher in diabetic patients than in their non-diabetic counterparts. In addition to other therapies, penile prostheses are very common. Associated infection maybe seen as early as two weeks and as late as two years after implantation. Staphylococcus epidermidis is the infecting organism in 40%-50% of the cases. Immediate therapy includes removal of the prosthesis, broad spectrum antibiotics and wound drainage.

**INDWELLING DEVICES**

All in-dwelling foreign bodies carry a risk of infection. Many diabetics with end stage renal disease undergo haemodialysis via subclavian or femoral catheter which may remain in situ for days or even months. Arteriovenous grafts can also be infected by haematogenous spread of microorganisms from a distant site; S. aureus is estimated to cause 80% of these infections.

Infections due to indwelling urinary catheters are common. Distinguishing infection from colonisation is often difficult and indicated by the presence of symptoms. Spontaneous resolution of bacteruria and funguria frequently occurs following removal of an indwelling catheter.

**Summary**

All these infections need appropriate antibiotics for an adequate time period and occasionally a surgical approach is required. Early detection through regular health checks is essential.

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**Thalassaemias and haemoglobinopathies**

Thalassaemias and haemoglobinopathies are the most common hereditary, autosomal recessive disorders in humans. Specific mutations are prevalent in different ethnic groups, and with increased global travel the mutations are now distributed worldwide.

Whilst thalassaemias (alpha and beta) and HbE mutations often present with microcytosis and hypochromia as a feature of the blood picture, other less common haemoglobinopathies may not be associated with any changes in the red cell indices. For example HbS and HbC variants seen in northern Africans have normal red cell indices.

Carriers are generally asymptomatic, but may present with microcytic anaemia, haemolytic anaemia, cyanosis or erythrocytosis. In the homozygous or compound heterozygous state, clinical consequences can range from mild compensated anaemia to life-long transfusion dependency and foetal death. Hence carrier state diagnosis is a significant public health issue.

**Laboratory Investigations**

The complete blood examination (CBE) is pivotal in an initial diagnostic workup. A family history suggestive of thalassaemia, or a finding of anaemia during migrant screening justifies further laboratory investigation.

A microcytic/hypochromic blood film, particularly with a slightly elevated red cell count and normal Red Cell Distribution Width (RDW) should raise suspicion of thalassaemia or haemoglobinopathy. Iron deficiency should be excluded before further investigations are requested.

The IMVS performs both CBE and HPLC (High Performance Liquid Chromatography) as primary ‘screening’ tools for haemoglobinopathies.

Molecular studies of haemoglobin genes are reserved for difficult cases, identification of an unknown haemoglobin variant in association with abnormal haematological findings, or if clinically indicated.
Laboratory Interpretations

Raised HbA2 (>3.8%) associated with a microcytic, hypochromic red cell picture is diagnostic of beta thalassaemia trait and no further investigation is required.

A normal HbA2 level (1.8-3.4%) with normal iron status but microcytic/hypochromic blood film may be indicative of alpha thalassaemia trait. It is important to note that this is only a ‘presumptive’ diagnosis.

Conclusion

Screening a partner or spouse for haemoglobinopathies is crucial in patients of reproductive age or for those considering pregnancy as it identifies couples who might be at risk of conceiving offspring with severe phenotypes such as thalassaemia major or sickle cell disease.

The detection of alpha gene mutations would be important only if the partner/spouse may be similarly affected. Definitive molecular diagnosis is warranted in these circumstances in order to provide appropriate genetic counselling.
New Patient Centres

The IMVS has recently opened a new Patient Centre in Morphett Vale. In addition to facilities to collect urine and swab samples we also offer glucose tolerance, calcium absorption, and Helicobacter pylori tests, skin scrapings and routine blood collection.

For appointments please phone 8322 2344.

Specialists on States
60 – 70 States Road, Morphett Vale.
Monday 8:30 a.m. – 4:30 p.m.
Tuesday to Thursday 8:30 a.m. – 12:30 p.m.

Payneham is moving!
From midday on the 30th of January, the IMVS Patient Centre at 296 Payneham Road, Payneham will close.

We will open a new Patient Centre at The Avenues (corner of Nelson Street and Payneham Road) from February 23rd.

The new spacious facilities with plenty of free parking will have extended opening hours from 8:00 a.m. to 5:00 p.m. Monday to Friday and Saturday 9:00 a.m. to 12 noon.

We thank you for your patient referrals to Payneham and look forward to seeing your patients at our new site. The phone number will remain the same 8362 9835.

Respiratory Virus Update

Table 1
Number of respiratory viruses detected by IMVS to 17/2/09.

<table>
<thead>
<tr>
<th>Viruses</th>
<th>YTD 2008</th>
<th>YTD 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenovirus</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Influenza A</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Influenza B</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Parainfluenza 1</td>
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</tr>
<tr>
<td>Parainfluenza 2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Parainfluenza 3</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>RSV</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Rhinovirus</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

These respiratory pathogens are most easily diagnosed by collecting a deep nasal swab, nasopharyngeal aspirate, throat swab or sputum. To order viral swab collection kits please telephone the IMVS Call Centre on 8222 3000 and ask for Consumer Products.

For tips on collection request IMVS form 2879.

Rapid viral detection results are available within 24 hours of specimen receipt.

New times
From Monday the 2nd of February
North Adelaide and Highbury: 8:00 a.m. to 5.00 p.m. Monday to Friday.

Clare
8:00 a.m. to 5:00 p.m. Monday to Friday (closed 1:30 – 2:00).
Saturday 9:00 a.m. – 12 noon.

To order location maps for your patients please phone the Call Centre (8222 3000) and ask for Marketing.

Stop Press
New IMVS Patient Centre in Waikerie.
Waikerie Medical Clinic
2 Strangman Road, Waikerie SA 5330
Telephone 08 85413524
Fax 08 85412503
Open Monday – Friday 8.30am – 12.30pm