Introduction

The idiopathic interstitial pneumonias (IIP) are a heterogeneous group of diffuse lung diseases that are also described as interstitial lung diseases [1]. The IIPs consist of several entities including: idiopathic pulmonary fibrosis (IPF), nonspecific interstitial pneumonia (NSIP), cryptogenic organizing pneumonia (COP), acute interstitial pneumonia (AIP), respiratory-bronchiolitis-associated interstitial lung disease (RB-ILD), desquamative interstitial pneumonia (DIP), and lymphocytic interstitial pneumonia (LIP) [2] (Figure 1). The primary site of lung damage in most of these entities is the interstitium – the space between the epithelial and endothelial layers, but can also involve alveoli, peripheral airways, and vessels.

Of these entities, IPF is the most common yet still poorly understood of all of the IIPs. It presents a challenge to all professionals in respiratory services. This review will highlight

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**CHAIR’S MESSAGE**

**SPRING/SUMMER 2009**

Spring...warm breezes, flowering bulbs, birds chirping. Aaahh, at last winter is behind us and we welcome the change of season with open arms. For many patients with lung disease, spring brings new opportunities to get outdoors and enjoy activities in the fresh air. The cold and icy winter winds that kept them inside have moved on, and the warmer air entices them outside of their homes. Let’s help encourage them to remain active.

On behalf of the Ontario Respiratory Care Society, I wanted to extend sincerest thanks to our outgoing chair, Julie Duff Cloutier. Julie has worked very hard over the past two years representing ORCS and sitting on the OLA Board of Directors. No small feat, given that Julie is a professor in the Faculty of Nursing at Laurentian University in Sudbury and that she welcomed a new addition to her family just over a year ago. With babe in arms, Julie travelled to meetings, retreats and conferences to fulfill her role. Thanks Julie!!

I’m very excited as the incoming Chair of ORCS to have been invited to participate in the development of the Ontario Lung Association’s new Strategic Plan entitled *Navigating Excellence*. Many hours went into thoughtful planning for the years 2009-2014. We weathered some difficult times in the past few years, but now we are encouraged by positive growth in Lung Association endeavours - quite an accomplishment in this challenging economic climate. ORCS and OTS continue to promote the relevance of research and the need to fund an effective research program as well as the value of professional education.

Pssst...heard of the National Lung Health Framework (NLHF)? It’s shaping things to come, and providing The Lung Association with new opportunities to work nationally and provincially in partnership with government and groups such as ORCS and OTS to improve lung health for Canadians. On April 22, the federal Health Minister Leona Aglukkaq announced a federal investment of $10 million over three years towards the NLHF. This is very exciting news for everyone involved in respiratory care. Stay tuned for updates.

Thanks to all ORCS members for helping to promote *Smoke-Free Ride* legislation that came into effect in January 2009 to protect children from second-hand smoke in vehicles. This is an excellent example of shifting efforts towards prevention and improving lung health of Ontarians.

**BETTER BREATHING 2009** was an outstanding conference. I hope you took advantage of attending the excellent sessions. Thank you to Rob Bryan and Larry Jackson, Co-Chairs of the Education Committee for their leadership on the planning of this program. Rob has stepped down after several years as Chair of the Education Committee and we are pleased to welcome

**EDITOR’S COMMENT**

As I sit down to write this editorial, my thoughts are focused on Anne Barbeta. You may recall that she wrote an article for *Update* in the Spring/Summer 2008 issue. Anne had had lung cancer in her early forties (despite a lack of any smoking history) and had received a lung transplant. Despite a successful recovery, the cancer returned about two year later and she received a second lung transplant a month ago. Following her valiant attempt to survive a second transplant, Anne died on Sunday, April 19th. Anne leaves behind two young children, a marvellous family and a group of friends who will miss her zest for life and her amazing spirits.

On a different note, we are pleased to welcome two new members to the ORCS Editorial Board. Suzy Young is a Nurse Practitioner - Respirology at St. Mary’s General Hospital in Kitchener and Elizabeth Gartner is an Occupational Therapist at West Park Healthcare Centre in Toronto.

As always, we hope you enjoy the articles on Interstitial Lung Disease by Dr. Lee and Dr. Marras and Kylie Hill’s perspective on respiratory care in Australia. We also have a summary of the 2009 Better Breathing Conference and information about ORCS educational seminars, research programs and some new Lung Association resources.

We would like to thank AstraZeneca for sponsoring this issue of *Update*.

DINA BROOKS, CO-EDITOR
Better Breathing 2009 was held at the Toronto Marriott Downtown Eaton Centre Hotel from January 29-31. About 170 people attended the ORCS sessions, which included interesting and informative lectures and workshops on a wide range of topics. Thank you to Co-Chairs Rob Bryan, RRT and Larry Jackson, BScPhm and other members of the ORCS Education Committee for organizing a successful conference.

The ORCS Annual General Meeting was held on Friday, January 30, 2009. The ORCS Chair, Julie Duff Cloutier presented a summary of the year’s activities and highlighted the work of the ORCS regional representatives and regional groups. She expressed appreciation to the members of the Provincial Committee and other members who volunteered for the ORCS during the previous year. The incoming Chair, Cathy Relf, BScPT, was welcomed to her new position. Cathy became the ORCS Chair for a two-year term beginning April 1, 2009. Julie was presented with the Past Chair’s pin and a gift in appreciation of her contributions as Chair. She will continue to serve on the ORCS Provincial Committee for one more year as Past Chair.

Libby Groff, RRT, BHA, CRE, who has been the Co-Chair of the Editorial Board for several years and has volunteered for the ORCS for 20 years, was congratulated and presented with The Lung Association’s Meritorious Service Award for outstanding volunteer service.

Nine posters were submitted to the annual poster competition and were presented at the Friday evening reception. Congratulations to the two winners of the competition, featured in our In the Spotlight column.

Also at the Friday evening reception, members were honoured for their long service with presentations by Miriam Turnbull, Chair of the ORCS Membership and Program Promotion Committee, of 5, 10, 15, 20 and 25 year ORCS Member pins.

Friday evening also featured Just What the Doctor Ordered, a lively reception for all delegates featuring great food, a live band (The Tectonics renamed Thoracic Park for the evening) and a lung health trivia game, Cough Up the Answers, skilfully MC’d by Deanna Abbott-McNeil, BScPT. Thank you to ProResp for sponsoring this enjoyable event, and to Sunrise Medical for their contribution.

Thank you to all of our conference sponsors and exhibitors for their support of Better Breathing 2009.

Planning is underway for Better Breathing 2010, scheduled for January 28–30 at the same location under the leadership of Mike Keim, the new ORCS Education Committee Chair. Watch the web site at www.on.lung.ca/orcs for information and a copy of the Call for Poster Abstracts. Suggestions of topics and speakers are welcome and may be submitted by e-mail to orcs@on.lung.ca.
several important aspects regarding the diagnosis, evaluation, and management of IPF.

**Diagnosis of IPF**

The incidence of IPF appears to be between 9-18/100,000 person years [3-6]. IPF is chronic fibrosing interstitial pneumonia of unknown cause limited to the lungs and associated with a surgical lung biopsy showing histological pattern of usual interstitial pneumonia (UIP) [1]. In the presence of a surgical biopsy showing UIP pattern, the diagnosis of IPF also requires: (1) exclusion of other known causes of interstitial lung disease including drug/environmental exposure and collagen vascular disease, (2) characteristic findings on chest radiograph and/or high resolution computed tomography (HRCT), and (3) abnormal pulmonary function tests consistent with a restrictive lung defect (reduced total lung capacity [TLC] or a reduced vital capacity [VC] with a normal or increased FEV1/FVC ratio) and/or impaired gas exchange (increased P(A–a)O₂, decreased PaO₂ with rest or exercise or decreased DLCO) [7]. In the absence of a lung biopsy, the diagnosis of IPF may be made according to the 2002 American Thoracic Society (ATS) [2]( Table 1).

The diagnosis of IPF requires the presence of all major criteria and at least three minor criteria. Clinically, patients often present with progressive exertional dyspnea or chronic non-productive cough. The most common findings on exam are “Velcro-like” crackles in the early stages, followed by cyanosis, clubbing, and cor pulmonale in advanced stages of disease.

The natural history of IPF is variable. Some patients progress slowly, or remain chronically stable. Others follow a more “step-wise” deterioration associated with exacerbations of IPF, while others present with rapidly deteriorating disease from the onset. IPF patients often die from respiratory failure within five to ten years of symptom onset [8]. The median survival for IPF is three years from diagnosis and five years from symptom onset [9, 10].

**How should the patient with ILD be evaluated?**

The evaluation of a patient with ILD should always begin with a thorough history and physical exam. The purpose of the history is to ascertain the presence of risk factors for IPF – age >50, smoking history, male gender, family history of lung disease, and any medication or environmental exposures, and to determine the patient’s functional status. More objective measures of evaluation include pulmonary function testing and six-minute walk tests. From a prognostic perspective, desaturation to below 88% during six-minute walk testing is the strongest determinant of mortality [10,11]. Other factors include a drop of ≥10% in FVC or ≥15% in DLCO over 6 months [10,11,12] and an isolated reduction in DLCO <40%.

Chest imaging plays a critical role in the diagnosis of IPF, and the high-resolution computed tomography (HRCT) is the modality of choice. A “classic” finding of IPF on HRCT scan can spare the patient from more invasive tests such as bronchoscopy and surgical lung biopsy [13]. Bronchoalveolar lavage (BAL) and transbronchial lung biopsies (TBLB) should be performed when there is suspicion for infection, malignancy, or some other specific or rare ILD. For example, sarcoidosis and hypersensitivity pneumonitis can mimic IPF on imaging, but BAL and TBLB may permit a relatively non-invasive diagnosis in this context. Initial relevant laboratory investigations include urine dipstick, complete blood count, serum electrolytes, renal and liver profile testing.

When there is suspected connective tissue disease (scleroderma, lupus, rheumatoid arthritis, etc.), autoimmune serology and inflammatory markers can also provide useful information.

Surgical lung biopsy provides pathological confirmation of a diagnosis of IPF. However, the procedure is not without complications. The post-operative complication rate is approximately 7%, with a mortality of <1% when performed in specialized centres [14-16]. Surgical lung biopsy should be considered in patients in whom the clinical and/or radiographic data is unclear and when the distinction is clinically important. In this instance, biopsies can be obtained either through open-lung biopsy or with video-assisted thoracoscopic (VATS). VATS procedures are better tolerated and associated with less post-procedure pain [14]. The biopsy site is guided by the HRCT findings and multiple biopsies should be taken. The diagnosis of IPF can be complex. Ideally, patients suspected of having IPF should be seen in a regionalized centre with access to a multidisciplinary team. The team should consist of respiratory health care professionals including chest physicians, radiologists, pathologists, and thoracic surgeons who specialize in IPF, and are accustomed to seeing and managing patients with complex respiratory diseases [17,18]. A trained social worker and access to palliative care services are also important, especially for disease progression and end-of-life care.

**What are the physiological changes seen in IPF?**

IPF is a restrictive lung disease. Due to increased elastic resistance, the lungs become stiff and difficult to expand. These mechanical alterations may be reflected in the patient’s breathing pattern - rapid and shallow, to reduce the work of breathing that
would be required to obtain a normal tidal volume. These findings are further exacerbated during exercise. Gas exchange abnormalities are also common in patients with IPF. In IPF, the alveolar capillary surface available for gas exchange is reduced. In addition, thickening of the interstitium reduces diffusion of gases across the epithelial layers. Arterial blood gas analysis often reveals hypoxemia, an increased A-a gradient, and associated hypocapnia. In addition, there is a reduced DLCO. These disturbances in gas exchange are also associated with changes in ventilation and perfusion. Assessment of gas exchange provides the best correlation with severity of disease and is the best physiological determinant of prognosis in the patient with IPF. During exercise, gas exchange is worsened and IPF patients become limited by their ventilatory capacity. They generally have a reduced oxygen uptake (VO2max) and work rate [19]. The ventilatory response shows an early, rapid rise in respiratory rate and plateau of the tidal volume; such a high ventilation to perfusion ratio leads to increased dead space ventilation. Cardiac output increases and the transit time of blood through the pulmonary circulation is reduced. As a result, the arterial oxygenation falls dramatically [19]. In many patients, chronic hypoxemia and pulmonary vasoconstriction lead to the development of pulmonary hypertension. Early in the disease, elevated pulmonary pressures are only seen during exertion, however as the disease progresses and the vital capacity drops to ≤50% or the DLCO drops to ≤45%, pulmonary hypertension at rest can also be seen. The development of pulmonary hypertension is a poor prognostic feature in IPF.

What are the treatment options for IPF?

The treatment of IPF begins with best supportive care, followed by the management of complications of IPF, and consideration for disease-modifying therapy. Best supportive care focuses on quality of life, and includes avoidance, dose-reduction, or withdrawal of therapy that does significant harm without perceivable benefit. This treatment strategy includes counseling on smoking cessation for all patients with IPF and consideration for pulmonary rehabilitation programs. The latter have shown significant improvement in exercise tolerance and quality of life following a 6-8 week program [20, 21]. Oxygen therapy is commonly used to reduce breathlessness in IPF. However, there is no evidence to document an effect on quality of life or survival. At present, oxygen therapy is universally prescribed to all patients with a resting PaO2 <55mmHg or in those patients with evidence of pulmonary hypertension and a PaO2 <60. In patients with desaturation on exertion, supplemental oxygen should be provided to maintain saturation ≥88%.

Gastroesophageal reflux disease (GERD) is present in up to 87% of all IPF patients, but only half of these are symptomatic [13]. GERD may play a role in both the pathogenesis and progression of IPF. At present, treatment is recommended in all symptomatic patients with GERD. Complications of IPF that should be mentioned also include increased risk of venous thromboembolism (VTE), pneumothoraces, and lung cancer. VTE and pneumothoraces should be suspected in the IPF patients with acute worsening of breathlessness. Pneumothoraces generally require insertion of a chest tube or drain, and in cases of failed re-expansion, may also require talc pleurodesis.

Disease-modifying therapies are limited in IPF. High-dose systemic corticosteroid as monotherapy has not been shown to improve survival or overall quality of life. One study found that the addition of the anti-oxidant N-acetylcysteine (NAC), to prednisone and azathioprine was associated with a slower deterioration in lung function than without NAC [22]. Based on these results, if aggressive medical therapy is initiated for IPF, the combination of azathioprine, prednisone and NAC should be considered. Other drugs trials including colchicine, penicillamine, cyclosporin, and interferon-g-1b have not been successful. The anti-fibrotic agent pirfenidone has been promising in early studies, and larger trials are in the follow-up stage. Studies of prostacyclin-based therapies such as iloprost and endothelin-receptor antagonists like bosentan, and other drug classes are ongoing. Lung transplantation is an available treatment for patients with IPF. The survival is ~75% at 1 year post-transplant, with a median survival of 5 years [13]. The optimal timing for lung transplantation is unknown, although IPF patients experienced the highest mortality rates while waiting for transplant but benefitted from earlier transplantation more than other candidates. Although guidelines for transplant assessment are widely available, the general consensus among specialists is to refer patients with IPF early as progression can be variable and rapid. To date there is no therapy proven to improve survival or otherwise significantly modify the clinical course of IPF. As such, it is recommended that all patients be considered for recruitment to clinical trials of therapy and/or for lung transplantation if appropriate.

Connective Tissue Diseases, Sarcoidosis, and ILD

ILD is common in patients with connective tissue disease (CTD). By far, the most commonly associated CTD is scleroderma. Signs and symptoms of scleroderma include skin thickening, Raynaud’s phenomenon, arthritis, esophageal dysmotility, and renal disease. In many cases, patients with scleroderma present first with respiratory symptoms before developing overt joint or skin manifestations and scleroderma-ILD resembles idiopathic ILD both radiologically and histologically. As a result, the diagnosis of scleroderma-ILD can be difficult. The astute clinician will often include a rheumatological screen in the initial diagnostic evaluation. ILD in the setting of CTD has a significant contribution to patient mortality. Up to 25% of all patients with CTD-ILD die of respiratory complications [23]. In scleroderma-ILD, the 9 year survival is 30% compared to 72% in those without severe organ involvement [23]. The 5-year survival based on physiological parameters is >90% in patients with normal PFTs, 60% in those with restrictive defects alone, and 9% in those patients with a DLCO <40%. The treatment of scleroderma-ILD is somewhat controversial, because of relatively small improvements in lung function and the toxicity of therapy, but the outcomes have been consistently positive in clinical trials of cyclophosphamide. Cyclophosphamide,
often in conjunction with low-dose oral glucocorticoids, has been shown to result in small improvements in lung function, other indices of scleroderma, and quality of life [24]. In patients unable to tolerate cyclophosphamide, an alternative may include azathioprine. Pulmonary rehabilitation may be of benefit and for patients with no other evidence of organ damage, lung transplant may be an option.

Sarcoidosis is a common ILD, with an incidence of 3-40/100,000 person years. Sarcoidosis is a multisystem, non-necrotic granulomatous reaction of unknown etiology. Sarcoidosis is classified according to the chest radiograph appearance. Stage 1 comprises of hilar and mediastinal adenopathy, Stage 2 is adenopathy plus ILD, and Stage 3 is ILD alone. Spontaneous remission is common: 60-80% of patients with radiographic Stage 1 disease, 50-60% with Stage 2 disease, and less than 30% in Stage 3 disease [25]. Lung function testing in sarcoidosis is non-specific. It is abnormal in only 20% of all Stage 1 disease and impairment only moderately correlates with abnormal radiographic findings. Ultimately, the diagnosis of sarcoidosis is made with typical chest radiographs or HRCT, and a biopsy showing non-caseating granulomas. The serum angiotensin converting enzyme (ACE) level may be helpful, but generally is not very sensitive. In patients with sarcoidosis, baseline tests for serum and urine calcium, liver function and ECG should be performed to assess presence of extrapulmonary organ involvement.

Corticosteroids are the cornerstone of therapy and treatment should be considered in all patients with extrapulmonary organ involvement. In patients with isolated pulmonary involvement, treatment is recommended in the setting of deteriorating lung function, extensive or progressive radiographic changes, or significant patient symptoms. Treatment with corticosteroids is often long, and concomitant bisphosphonates, calcium, and vitamin D are recommended to reduce the risk of osteoporosis. Other immunosuppressive agents such as methotrexate and azathioprine have a limited role, but should be considered in patients with progression on steroids or intolerance of steroids. Lung transplantation should be considered for end-stage sarcoid.

**Conclusion**

Idiopathic interstitial pneumonias are a heterogeneous group of diffuse lung diseases. IPF is the most common of these disorders and appears to be increasing in frequency [13]. It is a progressive and terminal disease with an unpredictable course. In the last decade, several potential therapies have been investigated, but no therapy has consistently shown improvement in clinical outcomes or survival. Currently, the approach to management of IPF should include best supportive care – including counseling on smoking cessation, enrollment in pulmonary rehabilitation, management of GERD, and if possible, enrollment into high-quality clinical trials. Care should be directed to regionalized centres with clinical experts and allied health services in respiratory medicine with well established care plans. Referral to a transplant centre should be made early.

**References**


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**When you can't breathe, nothing else matters.**
Reflections of an Australian Health Care Professional in Canada

Kylie Hill, BSc Physiotherapy, PhD; Respirology, West Park Healthcare Centre and Department of Physical Therapy, University of Toronto

I am a physiotherapist who graduated from Curtin University of Technology in Perth, Western Australia in 1994. After working in clinical practice for eight years, I decided to return to university to undertake a PhD in the area of pulmonary rehabilitation. Over the past three years, I have worked in Toronto completing post-doctoral studies with Drs. Dina Brooks and Roger Goldstein. As I plan to return home to Australia, I have been provided with this opportunity to reflect on the similarities and differences between the Australian and Canadian healthcare systems.

In this article, I describe issues pertaining to respiratory health in Australia, factors pertinent to the health of Indigenous Australians as well as the structure and funding of the Australian healthcare system.

Healthcare Issues

The leading causes of healthcare burden in Australia are similar to those described in Canada, being cancer, cardiovascular disease and mental disorders [1]. Issues that are unique within the area of respiratory medicine in Australia include diseases related to asbestos exposure and transmission patterns of tuberculosis (TB).

Australia, particularly the state of Western Australia, has a high incidence of diseases related to asbestos exposure. This is the result of the activity in the Wittenoom mines, located in the Pilbara region (over 1,000 km north of Perth). Between 1943 and 1966 crocidolite (blue asbestos) was heavily mined in Wittenoom [2]. Thousands of people were exposed and Wittenoom is regarded as Australia’s most significant industrial disaster. Respirologists at the Sir Charles Gairdner Hospital in Perth, Western Australia are actively involved in research in the areas of asbestosis and mesothelioma [3, 4].

The rates of TB in Australia are amongst the lowest in the world being 5 to 6 cases per 100,000 [5]. However, given Australia’s proximity to south-east Asia, an area characterized by considerable TB burden, disease surveillance, particularly in the northeastern regions of Australia, remains an area of interest. Directly to the north of mainland Australia is a body of water called the Torres Straight that separates Australia from Papua New Guinea; a country with estimated TB incidence of 233 per 100,000 [5]. Several small islands exist within the Torres Straight and both Torres Straight Islanders (that are Australians) and Papua New Guineans migrate between the islands in accordance with their traditional lifestyles. Efforts are ongoing to control TB in the Torres Straight Islands and prevent spread of the disease to mainland Australia [5].

As in Canada, COPD is a common condition and an important cause of hospitalization [6]. In May 2001 a multidisciplinary steering committee was assembled to write national COPD guidelines [6]. These guidelines are updated regularly in accordance with the new literature and serve to guide the clinical practice of primary care physicians and other healthcare professionals involved in the management of people with established COPD [6]. The guidelines provide recommendations grouped according to the mnemonic COPD-X which stands for Confirm diagnosis, Optimize function, Prevent deterioration, Develop a self-management plan and manage eXacerbations. Further information on COPD-X is available at the following website: http://www.copdx.org.au/guidelines/index.asp

As in Canada, the Indigenous Australian population face unique and serious medical issues. Approximately 2.4% of Australia’s population are Aboriginals and Torres Straight Islanders. Indigenous Australians are characterized by low incomes, education and rates of home ownership and high unemployment [7]. Their life expectancy is considerably less than the average Australian [8]. Although precise data regarding disease prevalence in Indigenous Australians is limited, they are known to have a high prevalence of diabetes, cardiovascular, kidney and respiratory disease as well as rheumatic fever and heart disease (in children) [7]. Risk factors for health conditions in this population include excessive alcohol intake, smoking, drug and substance use and poor nutrition [7]. Compared with non-indigenous Australians, smoking rates are nearly double among Indigenous Australians [9]. Indigenous health is an important area of concern for Australian healthcare providers.

Structure and Funding of the Australian Healthcare System

In contrast with Canada, the Australian healthcare system comprises both government and private components. The government, or public sector program, is called Medicare and was formed in 1984 [10]. Medicare is funded by general tax revenue (1.5% of income tax goes to Medicare) and it allows free access to hospital treatment in addition to subsidized out-of-hospital medical services, including visits to a family doctor, for all Australian citizens and permanent residents [10, 11]. Australia also provides a separate Pharmaceutical Benefits Scheme which serves to reduce the cost of prescription medication [8]. Low income earners including pensioners can apply for a healthcare card which entitles them to prescription medications at a cost of $3.60 per item [8]. Safety nets exist to reduce the cost associated with the purchase of prescription medications for individuals who require in excess of 52 items in a year [8]. Australia spends just over 8% of its Gross Domestic Product annually on healthcare, which is similar to the 9% spent in Canada [8].

In addition to this government healthcare system, unlike Canada, Australia also has a...
separate private healthcare system. Health insurance is optional and the extent of ‘cover’ individuals elect to have is variable. In its most basic form, health insurance offsets the cost of services such as physiotherapy, optometry and dentistry as well as those offered by alternative-medicine practitioners. Individuals can also elect to take ‘full hospital cover’ which allows them choice of specialist and the option of having procedures performed within a private hospital. Individuals can choose a private hospital for elective and semi-urgent surgeries as well as oncology and diagnostic services. Private hospitals do not have emergency rooms and provide limited subspecialty care. Wait times for services within the private system are very short, but the cost can be considerable. The government ‘encourages’ individuals to pay for health insurance by offering a 30% rebate on the cost of premiums. Furthermore, high income earners (thresholds set at approximately $100,000 for singles and $150,000 for couples) who do not have health insurance are required to pay an additional 1% income tax to Medicare. In contrast with the US, insurance is not provided through your employer. Insurance companies and packages are selected by the consumer, rather like ‘shopping’ for any other insurance service. Premiums range in cost from less than $20 per month to more than $150 per month, depending largely on the level of cover you require.

Physiotherapy Services: Scope and Access

The role of the physiotherapist in Australia is, in many respects, similar to that of physiotherapists in Canada. Physiotherapists are employed in acute care hospitals, rehabilitation facilities and community settings in both the public and private healthcare systems. Physiotherapists in Australia do, however, assume some additional roles. For example in some acute care facilities, physiotherapists are responsible for the provision of the non-invasive ventilation for patients admitted with respiratory failure or the application of plaster of paris, thermoplastic or fiberglass casts for patients admitted with orthopaedic injuries. Physiotherapists also provide treatment in the home and community settings for patients with respiratory, neurological and orthopaedic conditions. Such services are funded by Medicare and aim to either promote early discharge from hospital or reduce admissions. Further information is available at http://www.health.wa.gov.au/HRIT/HealthyatHome/index.cfm

Many publically-funded teaching hospitals provide access to out-patient physiotherapy services. However, waiting times can be substantial and individuals with private health insurance often elect to see a private practitioner. In an attempt to improve access to hospital-based out-patient physiotherapy services, Sir Charles Gairdner Hospital in collaboration with the School of Physiotherapy at Curtin University of Technology in Perth has established a ‘student clinic’. This clinic accepts referrals from family doctors and allows members of the public, for a small cost, see a student physiotherapist for treatment, which is provided under the supervision of an experienced clinician.

In summary, Australia has a two-tiered healthcare system and Australians face some unique respiratory health issues.

References

In the Spotlight

Dina Brooks, Associate Professor, Department of Physical Therapy at the University of Toronto and Research Associate at West Park Healthcare Centre, was awarded the Margaret Fitch Award for Best Poster by an Investigator at the Better Breathing 2009 conference for her poster: Physiotherapy Weekend Services in the Teaching Hospitals of the Greater Toronto Area: The first step towards reaching a consensus.

Marla Beauchamp, a physiotherapist who is completing her PhD in Rehabilitation Science at the University of Toronto, was awarded the Lisa Cicutto Award for Best Poster by a Student Investigator for her poster: Falls and Balance in Individuals with Chronic Obstructive Pulmonary Disease. Congratulations!

ORCS Research Programs

The deadline for all of the ORCS funding awards is now February 1st.

The ORCS provides funding to help build capacity of health care providers in Ontario to continue to be world leaders in lung health. There are 3 different funding opportunities to members of the ORCS, Education Awards for Advanced Respiratory Practice, Fellowships and Research Awards.

The objective of the ORCS Education Awards for Advanced Respiratory Practice is to support health care providers in the pursuit of advanced knowledge and skills related to respiratory care. The course of study must involve a formal program with an evaluative component. RespTrec courses are among the programs eligible for these awards.

The objective of the ORCS Fellowship Awards is to permit health care professionals who are members of the ORCS to pursue graduate study (Master’s or PhD level) so that they may be better able to contribute to the field of respiratory illness, health care and education. The program should show evidence of a plan to foster theory, research and either a clinical or functional area of specialization.

The objective of the ORCS Research Awards is to promote research regarding any field of acute or chronic lung disease. Research may include investigation of any phenomenon pertinent to illness assessment, management, or responses of the individual with a respiratory condition. Research may also be aimed at health promotion, education and prevention issues. Studies may use quantitative or qualitative methodologies.

ORCS membership is a requirement for all awards. Applications are reviewed by the ORCS Research and Fellowship Committee. Research grant applications are also subject to external review. The Committee’s funding recommendations are subject to the approval of the ORCS Provincial Committee and the Ontario Lung Association Board of Directors.

Applications and further information can be found at www.on.lung.ca/orcs.
Tuberculosis: Information for Health Care Providers: Fourth Edition
Sheila Gordon-Dillane, Director, Ontario Respiratory Care Society

Tuberculosis is not a disease of the past! TB remains a major cause of illness and death worldwide. In 2006, 9.2 million new cases occurred and 1.7 million people died of TB. Over the past two decades, the emergence of multi-drug-resistant (MDR) and extensively drug-resistant (XDR) strains of TB and the spread of HIV have increased the complexity of fighting this disease. Although in Canada the number of cases of active TB disease is relatively low, TB is still an important public health issue and clinicians need to be aware of it.

The Ontario Lung Association’s Tuberculosis Committee has produced a new resource for health professionals to:
• increase health care provider awareness of TB as a possible diagnosis;
• provide guidelines for case management and referral to specialists;
• increase knowledge of the appropriate use and choice of preventative therapy for latent TB infection; and
• increase understanding of the roles of family physicians, hospitals, TB clinics, public health, the Ministry of Health and Long-Term Care and public health labs in providing optimal TB care.

The booklet addresses the following topics: Epidemiology, Transmission, Pathogenesis, Screening, Diagnosis, Reporting Requirements, Treatment of Active TB Disease and Latent TB Infection, Nontuberculous Mycobacteria, In-Hospital and Institutional Management of TB, and The Role of Public Health in TB Control. The content is consistent with the Canadian Tuberculosis Standards, Sixth Edition and is presented in a concise, easy to read format. Tuberculosis: Information for Health Care Providers – Fourth Edition was written by members of the Ontario Lung Association’s Tuberculosis Committee and reviewed by medical experts. It is endorsed by the ORCS and OTS. The printing and distribution were funded by the Government of Ontario.

All About Asthma Triggers
Madonna Ferroone, CRE, RRT, Asthma Group Coordinator, Essex County Community Asthma Care PCAP/ARGI

The All About Asthma Triggers guide for health care providers started when a group of asthma educators, working in the Primary Care Asthma Program (PCAP), identified a need for a practical resource to identify potential triggers and to help their patients with asthma learn how to avoid and/or limit exposures. The guide includes information about common triggers (irritants and allergens) that are found across settings, as well as information about triggers found in specific settings such as schools, workplaces and farms/ranches. The guide is intended to be used as a tool to assist in decision-making for patient care while ensuring that appropriate supports are in place to provide the best care possible. In collaboration with the authors and reviewers, the booklet has been endorsed by the Ontario Respiratory Care Society (ORCS) and supported by the Government of Ontario and Ontario Lung Association.

The challenge to writing a booklet of this magnitude was ensuring comprehensive evidence-based information but also keeping in mind a user friendly format for all health care providers. The authors are confident that this was achieved. The guide reiterates consistent messaging and provides a “one stop shop” that will be soon available in print as well as on the Ontario Lung Association website.

In addition, new posters and postcards on Work-Related Asthma, the theme of World Asthma Day (May 5, 2009), are available from The Lung Association.

To order free copies of these publications, call 1-888-344-5864.

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Chair's Message... Continued from page 2

Michael Keim, RRT, London, as our new Education Chair. Mike is a former ORCS Chair and a long-standing member of the Education Committee and the Southwestern Ontario Regional Group Executive. Early Bird 3-day registrants at Better Breathing received a $50 discount towards the April Canadian Respiratory Conference, so participation in both events has been an excellent value for ORCS members.

We are now gearing up for our spring educational events organized by our regional groups. Check out www.on.lung.ca/orcs for a complete listing of educational opportunities in your community. You can also renew your membership on-line for the first time this year.

Speaking of the great outdoors, the Ontario Lung Association hosts many fundraising events across the province, from golf tournaments, the Amazing Ace, Grape Stomp, garden festivals, runs and scenic bike treks. Once again, check out the website to join in an event near you. It’s a great networking opportunity and a fun way to support the valuable programs and research activities of the OLA.

I hope you enjoy this issue of Update.

CATHY RELF, CHAIR, ORCS
RESPIRATORY ARTICLES OF INTEREST


Interstitial lung disease (ILD) encompasses a diverse group of restrictive lung conditions, characterized by dyspnea on exertion, exercise limitation and reduced quality of life. The majority of research in exercise training and chronic lung disease is done in patients with chronic obstructive pulmonary disease. This study is the first randomized controlled trial of exercise training in ILD, which evaluated the safety of exercise training, the effects on exercise capacity, dyspnea and quality of life, and the responses to exercise training in patients with idiopathic pulmonary fibrosis (IPF) compared with other ILDs. 57 patients were randomized to either a supervised exercise program twice weekly for 8 weeks or weekly telephone support. Measurements of functional exercise capacity (6 minute walk test), dyspnea (Medical Research Council Scale) and quality of life (Chronic Respiratory Disease Questionnaire and the Medical Outcomes Study Short Form 36) were taken at baseline, after the 8 week intervention and at 6 months. No adverse effects were recorded with exercise training. The intervention group had an improved 6 minute walk distance (mean of 35 m) and reductions in dyspnea and fatigue at 8 weeks. These effects were not sustained at 6 months. There were no significant differences between the response of patients with and without IPF. This study has demonstrated that exercise training is both safe and feasible in ILD, resulting in short term improvement in functional exercise capacity, dyspnea and quality of life. Given that treatment options are limited in ILD, exercise training should be considered in this population.


This article provides insights into the development of new therapies for asthma. Our ever expanding knowledge of inflammatory mechanisms is leading to the development of potentially useful therapies including p38 MAPK inhibitors and anti-oxidants, biological agents against the interleukin-13 pathway, and modulators of T-regulatory and T-helper-17 cells. We can look forward to the development of improvements in available therapies such as the development of fast-onset once-a-day combination drugs with better safety profiles. Although a cure is unlikely to be developed in the near future, our understanding of inflammatory mechanisms could bring such a situation closer to reality.


Have you ever wondered what causes repeated asthma exacerbations? Is it just the patient’s non-compliance with treatment or other factors? It is not yet clear why patients with asthma can lose lung function more rapidly than patients without asthma. Dr. O’Byrne and colleagues on behalf of the START Investigators group found that severe asthma exacerbations are associated with a more rapid loss in lung function and that this did not occur in patients taking inhaled corticosteroids. The START (inhaled steroid treatment as regular therapy in early asthma) study was a 3 year randomized double blind study of 7165 patients (5-66 years) with persistent asthma for less than 2 years. The objective of this study was to determine whether severe asthma exacerbations are associated with a persistent decline in lung function and whether early intervention with low dose inhaled budesonide prevents severe asthma exacerbation and decline in lung function. The placebo group yielded a significant change in post bronchodilator FEV₁% -6.44% in patients who experienced a severe exacerbation and -2.43% in patients who did not experience exacerbations. The change in post bronchodilator FEV₁% in the budesonide group was less than the placebo group 2.48% and 1.72% respectively. The difference in magnitude of reduction was statistically significant. This is an interesting article, especially if you are involved with asthmatic patients who experience repeated severe exacerbations.

Summarized by Lisa Wickerson, Larry Jackson and Yvonne Drasovean

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Happy 100th Birthday

Love,

Mom + Dad

We can’t make any promises, but we’ll keep trying. With products in the therapeutic areas of cardiovascular, gastrointestinal, oncology, respiratory, neuroscience and infection, and with more than $100 million committed each year to research in Canada, who knows where that can lead?

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