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Canadian Council of Cardiovascular Nurses

Conseil canadien des infirmières(iers) en nursing cardiovasculaire

Dr. Paula Price, RN, PhD
May 3, 1958—January 23, 2019

This edition of the Canadian Journal of Cardiovascular Nursing is dedicated to Dr. Paula Price, Director of Publications, Canadian Council of Cardiovascular Nursing

I first met Paula Price in the 1980s when we took a critical care course "online" and, remember, there was no internet, so we sat in a room with a polycom and teleconferenced from coast to coast. Paula said very little, but when she spoke, I thought wow that "girl" is an exceptional critical care nurse. From that initial introduction, our friendship grew; we would write letters, send cards and then in the late 1980s/early 1990s the internet changed how we communicated. We then had the liberty of email and our friendship grew by leaps and bounds.

Paula pursued a master's degree and PhD in nursing because she said it was easier than having babies. Truth was, Paula had an innate desire to challenge herself. She was open to any and all academic challenges. She always wanted to put in that last piece of the puzzle. She had such a tremendous sense of humour. I teased her often about being the "coolest PhD I ever had the privilege to hang out with."

In the year 2000, we got to meet in person at a Critical Care Dynamics conference. This confirmed for me that Paula Price was an exceptional nurse and our friendship became even stronger. As I decided to return to school Paula was my mentor. She edited most of my papers and helped me grow as an educator. She always commented on my overuse of the comma!

Paula encouraged me to put my name forward to sit on the CCCN Board of Directors in 2004. This allowed us to meet in person once a year, in addition to serving an organization we both felt very committed to. At that time, Paula was co-editor of the *CJCN*.

In 2007 Paula resigned as editor of the *CJCN* due to health concerns. She had been diagnosed with Primary Pulmonary Hypertension. It was an article published in the *CJCN* by Nova Scotia Nurse Practitioner Gillian Yates that really helped Paula understand her illness and its trajectory. We discussed this article at length and Paula was resigned to the idea that eventually she would require intravenous Flolan (epoprostenol).

In 2014 Paula returned as sole editor of *CJCN* and was a tremendous resource for me, as president of CCCN. In 2017, the CCCN annual spring conference was in Victoria and Paula was so excited to be well enough to attend. As she stepped out of the taxi I cried with joy at the "new Paula". She had lost more than 60 pounds and was feeling at the "top of her game." She had spirit and enthusiasm that propelled our board meeting forward like no other. She was seeking the position of Director of the Mount Royal University School of Nursing and Midwifery. She was successful in obtaining this position and was so excited to move on to her next challenge. She would often say the directorship was her dream job.

In late fall 2018 Paula developed pneumonia, superimposed on her already fragile lungs, and she was hospitalized. At this time, we used facetime on a regular basis and often she would say, "wait, let me get my lipstick on!" She continued to laugh and joke and was hopeful to be discharged and return to work.

Although Paula was discharged, she was exhausted and shortly after Christmas holiday 2018 she was admitted and started on Flolan (epoprostenol). However, it was without success. We texted every day and she said "If I don't get out of this ICU, tell my story, our story, and overuse the comma, and don't let anyone edit it. Tell them about nursing and how it makes lifelong friends and gives you someone to share your innermost fears with. It gives you someone to drink wine with (red, please) and most importantly it gives you someone to laugh and cry with, someone who understands your feelings like no other." Yes, I cried when I read this text message, but most of all I laughed because that's what Paula would expect.

My dear friend, we did not make it to Vegas together, but I will toss a penny in the fountains of the Bellagio so that you receive one last virtual hug. Rest in peace my dear, dear friend.

oxo

Susan Morris RN(EM) MEd CNCC(C) CCN(C)

Susan Morris

Your smile allowed me to feel happiness;

Your laughter was contagious.

You, my friend, challenged me to be better;

You built a career but unknowingly created so much more.

Thank you for being my friend, my mentor, and my "go to gal"

Thank you for having the courage to be ExtraOrdinary.


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I am the vo
Cardiova
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because.
Susan
Susan Morris
PRESIDENT
I have COURAGE
I am the voice of CHANGE

22.10.2011 22:34

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Conseil canadien des infirmières et infirmiers en soins cardiovasculaires
I am the voice of CHANGE

Call for Resolutions for the 2019 CCCN Annual General Meeting

Resolutions are invited for discussion at the 2019 annual general meeting of CCCN. Members wishing to propose a Resolution must have it typed and signed by at least two other members. If the president and the secretary agree that the Resolution is appropriate, it shall be included with the names of the mover and seconder in the agenda for the meeting.

At the annual meeting, a member proposing a Resolution, or the proposer's appointed representative, will be asked to clarify the background to the Resolution, if necessary, and to formally move acceptance of the same.

Please submit Resolutions to CCCN by **April 29, 2019.**

Format for Submitting Resolutions

The Resolution has two parts; first the 'preamble' and then the 'resolved'. Please provide the name and address of each of the individuals participating in the submission of the Resolution. The following example is provided for your guidance.

Preamble—'WHEREAS' *smoking is a known risk factor related to the development and progression of cardiovascular disease;*

BE IT RESOLVED—*that no smoking be permitted in any business meeting or scientific symposia hosted by the Council.*

Submitted by:

Mover: Name:_____ Address: _____

Seconder: _____ Address: _____

Seconder: _____ Address: _____

Date: April 29, 2019

Appel de résolutions pour l'assemblée générale annuelle du CCIISC de 2019

Nous vous invitons à nous faire parvenir vos résolution pour qu'elles puissent être discutées à l'occasion de l'assemblée générale annuelle du CCIIS de 2019. Les membres qui veulent présenter une résolution doivent la faire signer par au moins deux personnes. À l'assemblée générale annuelle, les membres proposant une résolution ou leur représentant(e) seront priés de donner le contexte de la résolution et, au besoin, de présenter une motion en à bonne et due forme pour son acceptation. La présidente et la secrétaire se réservent le droit de décider du bien-fondé des résolutions proposées, compte tenu des statuts du Conseil et de tout autre élément qui risque de compromettre la validité de la résolution.

Veuillez soumettre vos résolutions au CCIISC avant le **29 avril, 2019.**

Format de présentation des resolutions

La résolution comporte deux parties, d'abord le "Préambule", puis la partie qui commence par "Il est résolu que". Veuillez fournir le nom et l'adresse de chaque personne participant à la soumission de la résolution. Voici un exemple dont vous pourrez vous inspirer :

Préambule—*Attendu que l'on sait que l'usage de la cigarette est un facteur de risque lié à l'apparition et à la progression des maladies cardio-vasculaires,*

IL EST RÉSOLU QUE—*L'usage de la cigarette sera interdit à l'occasion des réunions d'affaires et des colloques scientifiques du Conseil.*

Soumis par :

Motionnaire : Nom :_____ Adresse : _____

Co-motionnaire: _____ Adresse : _____

Co-motionnaire : _____ Adresse : _____

Date : le 29 avril, 2019

Pulmonary Hypertension: A Review for Nurses

Gillian Yates, MN, NP, CCN(C), and Kelly Saunders, BN, RN

Abstract

Pulmonary hypertension (PH) is a progressive disease resulting from increased pulmonary vasoconstriction, vascular remodelling and thrombosis, leading to right heart failure. Symptoms at clinical presentation are often vague and difficult to differentiate from other diseases. A good history and identification of key physical findings will facilitate earlier diagnosis resulting in tailored treatment to alleviate symptoms and improve outcomes.

This article will provide an overview of PH including pathophysiology, clinical presentation, diagnostic testing, and treatment modalities with a Canadian perspective. The main focus is directed towards the care of patients with pulmonary arterial hypertension (PAH). Implications for nursing will also be discussed, focusing on education and support of patients and families.

This article is reprinted from CJCN, Volume 18, Issue 1, Winter 2008

Introduction

Pulmonary hypertension (PH) is a hemodynamic disorder defined by an abnormal elevation in mean pulmonary artery pressure > 25 mmHg at rest, or > 30 mmHg during exercise, with normal left-sided pressures and a normal pulmonary capillary wedge pressure (PCWP) of < 15 mmHg (Farber & Loscalzo, 2004; Traiger, 2007). Persistent elevation in pressure leads to pulmonary vascular remodelling, endothelial cell thickening and plexiform lesion formation, vasoconstriction and hypertrophy (Langleben et al., 2005). Increased pulmonary vascular resistance causes right ventricular hypertrophy and failure resulting in decreased cardiac output and premature death (Nagendran & Michelakis, 2007; Traiger, 2007).

The most recent classification system for PH, based on the Venice World Symposium in 2003, consists of five groups. World Health Organization (WHO) group one is known as pulmonary arterial hypertension (PAH) with its subgroups idiopathic (IPAH), familial (FPAH) and associated (APAH). WHO group two consists of PH associated with left heart disease including left-sided atrial or ventricular disease or left-sided valvular disease. WHO group three includes PH due to lung diseases and/or hypoxemia, and WHO group four consists of PH as a result of chronic thrombotic or embolic disease. WHO group five includes miscellaneous causes such as sarcoidosis, histiocytosis X, lymphangiomatosis or compression of pulmonary vessels (Farber & Loscalzo, 2004; Rubin, 2004).

PAH is relatively rare, with an estimated prevalence of 15 per one million noted in the French registry. IPAH occurs in 5.9 cases per million (Humbert et al., 2006). These rates are increased in comparison to the National Institution of Health (NIH) Registry on which most PAH information has been based in the past. These increases may be a result of increased disease incidence, but are more likely due to improved disease recognition. REVEAL, a large U.S. registry, will provide us with a better understanding of PAH and how it evolves. A disease of unknown etiology, it is not racially specific, but there is a noted gender difference with a higher prevalence in women (Haest et al., 2004). IPAH may be genetically transmitted in families, as gene mutations have been found in up to 20% of sporadic cases of IPAH (Langleben et al., 2005).

FPAH accounts for 10% of all cases. Inherited in an autosomal dominant manner, gene mutations have been found in up to 50% of patients with FPAH. However, with only a 20% penetrance, there is a 10% estimated risk of acquiring the disease (McGoon et al., 2004).

Specific disease entities are linked to the development of APAH. These include connective tissue disease, congenital systemic-to-pulmonary shunts, portal hypertension, HIV infection, drugs, and toxins (Langleben et al., 2005). While APAH occurs most frequently in systemic sclerosis (scleroderma), portal hypertension can lead to PH in 2% to 4% of cases. There is a 0.5% risk of PAH associated with HIV infection. Other contributing risk factors for the development of APAH include the use of anorexic agents, cytotoxic agents, contaminated rapeseed oil, contaminated tryptophan, sickle cell anemia, and end stage renal and liver disease. Thyroid disease may be a contributing factor, but is not yet fully understood (McGoon et al., 2004).

Left-sided atrial or ventricular heart disease may cause pulmonary venous congestion, leading to venous PH and, eventually, PAH. Hypoxia-causing lung diseases such as chronic obstructive pulmonary disease (COPD), chronic thromboembolic diseases, obstructive sleep apnea, chronic

Quiz Answers

Answers to quiz that appears on page 12.

1. d; 2. b; 3. c; 4. a; 5. d; 6. e; 7. c; 8. d; 9. a; 10. d

exposure to high altitudes and other parenchymal lung disease may also lead to PAH. Approximately 1% of patients with COPD will develop severe PH (mean PASP > 40 mm Hg.) and 5% will develop moderate PH (mean PASP 35 mm Hg) (Nathan, 2007). New risk factors for the development of chronic thromboembolic PH include splenectomy, ventriculostrial shunt for hydocephalus and chronic inflammatory disorders such as osteomyelitis and inflammatory bowel disease (Hoeper & Rubin, 2005).

Although there are many diseases associated with PH, the Canadian Cardiovascular Society and Canadian Thoracic Society position statement on PAH, along with the American College of Chest Physicians (ACCP) guidelines and recommendations for therapy focus primarily on PAH (group one), as there is currently little evidence of their effectiveness in the other WHO classifications (Badesch, Abman, Simonneau, Rubin, & McLaughlin, 2007; Langleben et al., 2005).

Prognosis

Though considered a progressive disease with poor outcomes, IPAH is heterogeneous with death occurring in months or years after diagnosis (McLaughlin et al., 2004). The average life expectancy without treatment is 2.8 years from the onset of diagnosis (Adiutori, 2000; D'Alonzo et al., 1991; Haest et al., 2004). The mortality rate increases 2.4-fold if patients can walk less than 300 metres in six minutes, and almost three-fold if oxygen saturation decreases by 10% (Budev et al., 2003). The development of new treatment options is expected to improve survival rates.

Survival rates in PAH associated with underlying etiologies are influenced by the associated disease. APAH occurs most frequently in systemic sclerosis (scleroderma), causing death in up to 50% of patients. In one study cited by McGoon et al. (2004), PAH accounted for deaths in 38% of patients with mixed connective tissue disease, scleroderma, systemic lupus erythematosus (SLE) and myositis. Studies have shown that HIV-associated PAH has similarly poor outcomes when compared to IPAH (McLaughlin et al., 2004). Patients with congenital heart disease appear to have a better prognosis than those with IPAH. There is a three-year mortality rate of 50% for patients with PH secondary to COPD, interstitial lung disease, or moderate airflow obstruction (Nauser et al., 2001).

Factors that may predict worse outcomes in IPAH are advanced New York Heart Association–Functional Class, low six-minute walk test distance, presence of pericardial effusion, elevated mean right atrial pressure, reduced cardiac index, and elevated mean pulmonary artery pressure (Traiger, 2007).

Pathophysiology

Normal pulmonary vasculature is a low-pressure high-capacitance bed that easily adjusts for increased cardiac output with little or no increase in pressure (Langleben et al., 2005). Normal pulmonary artery systolic pressure (PASP) is 13 mmHg to 26 mmHg while normal mean pulmonary artery pressure (PAP) ranges from 7 mmHg to 19 mmHg (Naeije, 2004).

The development of PAH is not well understood. Environmental exposure and genetic factors are considered important mitigating events. The underlying factor thought to initiate most of the component abnormalities is endothelial dysfunction. Pulmonary vascular remodelling is thought to be the first and most prominent resulting abnormality, followed by structural alterations in microvessels, formation of plexiform lesions and alterations in endothelial cell apoptosis (Langleben et al., 2005). Pathological mechanisms in three neurohormones, endothelin, nitric oxide (NO) and prostacyclin contribute to imbalances between vasodilation and vasoconstriction (Traiger, 2007). Coagulation abnormalities result in thrombosis in situ. Subsequently narrowed pulmonary arteries lead to increased pulmonary vascular resistance and increased right ventricular workload. Sustained increased pressure causes right ventricular (RV) dilation and Cor Pulmonale, or right-sided heart failure, with a resultant decrease in cardiac output (Adiutori, 2000).

Pulmonary venous hypertension, the most common form of PH, is often associated with diseases that impede pulmonary venous drainage such as congenital cardiac abnormalities, left ventricular dysfunction and mitral valve disease (Jassal, Sharma, & Maycher, 2004).

Chronic hypoxia causes vasoconstriction of the pulmonary vascular bed, leading to high pulmonary resistance and resulting RV failure. Restrictive and constrictive lung disease, as well as sleep apnea and chronic mountain sickness result in alveolar hypoxia. This leads to acidosis, compounding the hypoxia and PH. COPD is the most common cause of PH (Nauser & Stites, 2001). Chronic pulmonary embolism reduces blood flow through large pulmonary arteries also resulting in PH.

Mild to moderate increases in PASP (25 mmHg to 45 mmHg) may result from left heart failure or COPD. Severe PASP (> 55 mmHg) is often related to collagen vascular disease or chronic pulmonary thromboembolism (Budev, 2003).

Clinical presentation

PAH is often advanced before it becomes manifest (McGoon et al., 2004). It is often a diagnosis of exclusion with vague and non-specific symptoms. Symptoms may be present for up to two to three years before a diagnosis is made (Traiger, 2007). Unexplained dyspnea, occurring in up to 60% of patients with PAH, is the most common symptom. Other symptoms include fatigue, weakness and exercise intolerance. Atypical chest pain, in the presence of normal coronaries, occurs in up to 40% of patients as a result of RV strain or pulmonary artery stretching. Syncope and pre-syncope occur in up to one-third of patients and may be due to reduced cardiac output, arrhythmia or right ventricular

ischemia (Budev et al., 2003). Peripheral edema, ascites and weight gain are signs of right heart failure. Orthopnea and PND may be the result of pulmonary congestion from left-sided heart disease, while symptoms of connective tissue diseases may include Raynaud's phenomenon, arthalgias, or swollen hands (McGoon et al., 2004).

The most consistent physical finding is an increased pulmonic component of the second heart sound (P2), which may be palpable and heard at the cardiac apex resulting from increased force of the pulmonic valve closure due to increased pulmonary artery pressure (Hegewald et al., 2007). Other findings include an early systolic ejection click, a mid-systolic ejection murmur, a palpable left parasternal lift, a right ventricular S4 gallop and a prominent jugular "a" wave (Hegewald et al., 2007; McGoon et al., 2004). Signs of more advanced disease include a diastolic murmur of pulmonic regurgitation, and a tricuspid regurgitation murmur. Right ventricular heave with a right-sided third heart sound (S3), increased jugular venous pressure (JVP) with a prominent "v" wave, pulsatile hepatomegaly, ascites, peripheral edema, and anasarca, are indicative of RV failure. Cyanosis, cool extremities and hypotension are due to reduced cardiac output and peripheral vasoconstriction (McGoon et al., 2004).

When examining the patient, also look for signs of underlying causes of PH such as central cyanosis (congenital heart disease), clubbing (congenital heart disease, lung disease or hepatic disease), fine rales, wheezing, prolonged respiration (lung disease), hepatomegaly (liver disease), sclerodactyly, telangiectasis, calcinosis, Raynaud's phenomenon (connective tissue disease) and peripheral venous disease (thrombosis and pulmonary thromboembolic disease) (Budev, 2003; McGoon et al., 2004).

Diagnostic tests

Early recognition and treatment of PH is important because of increased risk of morbidity and mortality with advanced disease. Diagnosis is usually made when evaluating presenting symptoms of shortness of breath, chest pain, fatigue or syncope. Screening is recommended for patients at high risk (Traiger, 2007). PAH specialty centres generally follow ACCP guidelines for evaluation of patients with suspected PAH. These diagnostic algorithms include various cardiac, respiratory and diagnostic imaging examinations, as well as extensive blood work (Hegewald et al, 2007).

One of the most important screening tools for evaluation of PAH is echocardiography. A 2D echocardiogram with Doppler flow studies can confirm the presence of tricuspid regurgitation and peak pulmonary pressure, along with RV dilation and hypertrophy (Hegewald et al., 2007; Nauser, 2001). Transthoracic echo will also assess for causes such as left ventricular systolic or diastolic dysfunction, mitral valve disease and intra-cardiac shunting (Budev et al., 2003).

An ECG may show signs of RV hypertrophy with tall R waves in the right precordial leads, right axis deviation, and RV strain. Right atrial enlargement is indicated by a large P wave (> 2.5 mm) in leads II, III and AVF. A P wave amplitude in lead II > 0.25 mV in patients with PAH is a prognostic indicator with a 2.8-fold increase risk of death over six years. This risk increases 4.5-fold with an additional 1 mm of P-wave amplitude in lead III (McGoon et al., 2004).

Cardiomegaly and prominent pulmonary arteries on chest x-ray may be a discovery that leads to further testing. Other tests may include arterial blood gases, overnight pulse oximetry, pulmonary function tests, chest CT/CT angiogram, and ventilation perfusion lung scan to exclude other causes such as pulmonary emboli, obstructive sleep apnea or interstitial lung disease (Nauser, 2001). Basic evaluation of liver and kidney function, as well as CBC, coagulation studies and antibody levels (i.e., ANA) should be obtained. Up to 40% of patients with IPAH have elevated antinuclear antibodies (ANA) (McGoon et al., 2004). Brain natriuretic peptide (BNP) is elevated with RV dysfunction and failure.

Maximal exercise test is contra-indicated in this patient population and may lead to syncope or sudden death. However, the six-minute walk test is the standard method used to determine and monitor functional capacity (Budev, 2003).

Cardiac catheterization in all patients with pulmonary hypertension is considered the gold standard. Left heart catheterization measures the left ventricular end diastolic pressure (LVEDP) and assesses coronary artery disease. Right heart catheterization reveals pulmonary artery pressure (PAP), pulmonary vascular resistance (PVR) and cardiac output (Budev et al., 2003).

Vasoreactivity testing may be done during the cardiac catheterization on patients who are not in right heart failure. Vasodilator agents such as inhaled nitric oxide (NO), intravenous epoprostenol, or adenosine may be used. The agent is titrated up until the patient becomes hypotensive with a systolic blood pressure decrease of 10%, or to 85 mmHg, or heart rate increase by 40%, with side effects of nausea, headache or lightheadedness or maximum targets have been reached (Traiger, 2007). The test is considered positive with a 10 mmHg decrease in mean PAP and a mean PAP of less than 40 mmHg with a normal or high cardiac output (Traiger, 2007).

Treatment

Treatment modalities for PAH are based on attempts to manage the imbalance of vasoactive effectors found in the pulmonary vessels of patients with this disease. Current therapies available to treat PAH vary in their effectiveness on symptom reduction, increased exercise tolerance, improved quality of life, and increased survival for patients. Treatment is complex, expensive and requires a specialized group of individuals to implement. Inaccurate diagnosis and inappropriate treatment may be lethal or at best ineffective.

Currently, Health Canada has approved five PAH specific therapies, addressing three effector pathways in PAH.

They include endothelin receptor antagonists, (selective and non-selective), phosphodiesterase type-5 (PDE-5) inhibitors and prostacyclin analogues. Pharmacological treatment may also include high-dose calcium channel blockers, oxygen, anticoagulants, diuretics and digoxin. Non-pharmacological treatment includes dietary and lifestyle management. Crucial to the treatment of APAH is the appropriate treatment of the underlying disease process.

The determination as to which type of therapy is appropriate for a particular patient at any given time is a clinical judgment dependent on the patient's functional class, concomitant illnesses and medications and ability to access the specific therapy. Many of the researched medications are shown to be most effective in specific disease-related PAH and/or at a given functional class. Accessing therapies outside of these evaluated parameters can be difficult.

Prostacyclin is an endogenous prostaglandin produced by vascular endothelial cells. It has positive inotropic effects and is responsible for direct vasodilation. Inhibition of platelet aggregation and antiproliferative qualities are also present. Circulating levels are found to be reduced in PAH patients, and it is thought this may be partially responsible for the vascular changes found in the pulmonary vessels of PAH patients. Administration of synthetic prostacyclin appears to be responsible for vascular remodelling in patients on chronic infusion. The chronic use of prostacyclins has been found to improve symptoms, quality of life and long-term survival (Fortin & Tapson, 2004; Haest et al., 2004; Widlitz et al., 2007).

Epoprostenol (Flolan) was the first prostacyclin therapy developed worldwide, and the first available in Canada (Turple, 2003). Administration and safety of this drug are challenged by a short pharmacological half-life, thus requiring continuous IV infusion by pump through a central venous catheter. Central venous catheter sepsis and thromboembolic events are risks associated with the use of Epoprostenol. Avoiding these risks requires detailed patient education and close follow-up regarding the medication preparation and administration process. Epoprostenol is unstable at neutral pH and stable for only eight hours at ambient temperature, requiring pH specific diluent for preparation and ice packs to maintain the 24-hour infusion cassette. Chronic epoprostenol infusions are usually started at 2–4 ng/kg/min and increased by 1–2 ng/kg/min two to three times a day until symptoms improve or dose-limiting side effects occur (Berkowitz & Coyne, 2003; Fortin & Tapson, 2004). Common side effects include headache, jaw pain, leg pain, diarrhea and nausea. Many patients note that these effects diminish somewhat after initiation of the infusion (Widlitz et al., 2007).

Treprostinil (Remodulin), another prostacyclin analogue, can be administered subcutaneously (SC) as well as IV and is stable at room temperature with a longer half-life (three hours) (McLaughlin, 2004). Continuous SC infusion in the abdomen, initiated at 2–4 ng/kg/min and titrated up 2–4 ng/kg/min daily to 22.5 ng/kg/min, has shown improvement in the six-minute walk test, dyspnea, hemodynamic, and quality of life parameters (Berkowitz & Coyne, 2003; McLaughlin, 2004). Side effects are similar to epoprostenol, but also include pain at the infusion site, occurring in 80% to 90% of patients. Up to 50% of patients placed on treprostinil therapy choose to terminate it due to the severity of site pain.

Other prostacyclin analogues not yet available for use in Canada include inhaled iloprost, and oral beraprost. There is also ongoing investigation of treprostinil in an inhaled form.

Oral endothelin-1 receptor antagonist (ERA), bosentan (Tracleer), available in Canada since 2002, lowers pulmonary vascular resistance through vasodilation and possibly remodelling of the pulmonary bed (O'Malley, 2004). It has been shown to improve exercise capacity and hemodynamics, as well as survival. It is titrated from a starting dose of 62.5 mg for four weeks to a maintenance dose of 125 mg twice a day. The most common concern is hepatotoxicity (Barst et al., 2004; Berkowitz & Coyne, 2003; O'Malley, 2004). Side effects include headache, flushing, peripheral edema, anemia, fatigue, dyspepsia and increases in liver function test values. Liver function tests must be obtained on a monthly basis. Bosentan is metabolized by the liver through the cytochrome P450 pathway. Therefore, concurrent use of cyclosporine, glyburide, warfarin, HMG Co-A reductase inhibitors (statins) and oral contraceptives may decrease the effect of bosentan (Turple, 2003). Interaction with oral contraceptives is of particular concern as bosentan has been shown to cause serious birth defects.

Sitaxsentan (Thelin) is a selective endothelin receptor antagonist recently approved in Canada. Its action is to block endothelin-A (ET-A), which is thought to be responsible for pulmonary vasoconstriction, without blocking endothelin-B, thought to be responsible for removing endothelin-1 from the pulmonary vessels. Similar to bosentan, there are concerns regarding potential liver toxicity and teratogenicity with this medication. Patients must be monitored monthly for liver enzyme elevation, and for those of childbearing age, counselling on adequate birth control is essential (Barst et al., 2004).

A third medication, ambrisentan, is also pending Health Canada approval. It is a somewhat selective ERA (for ET-A) with early reports noting similar efficacy and side effects to sitaxsentan.

Oral sildenafil (Revatio) is a phosphodiesterase type-5 (PDE-5) inhibitor that acts as a potent pulmonary vasodilator with antiproliferative properties. Initially approved for erectile dysfunction as Viagra, sildenafil alone shows a dose dependent improvement in mean pulmonary artery pressure (Olschewski, et al., 2002). Sildenafil also improves exercise capacity and quality of life in patients with systolic heart failure and associated PAH (Gallie et al., 2005; Lewis et al., 2007). The standard approved dose is 20 mg three times a

day (TID). However, initial trials were conducted with up to 100 mg TID and long-term information at the lower dose is still pending. The drug appears to be well-tolerated by both men and women with few side effects. Tadalafil (Cialis), a longer-acting drug from the same class as sildenafil, (PDE-5), is now in trials for use in PAH.

High-dose calcium channel blockers (CCB) (Diltiazem, Nifedipine) were initially the only treatments available for PAH. Vasodilator testing during a right heart cardiac catheterization is now required to determine if a patient is considered a candidate for high-dose CCBs. A monitored trial of high-dose CCB may follow a positive test, however, only 10% of patients with PAH who are vasoreactive can safely use CCBs (Traiger, 2007). Those found to have a positive initial vasodilator response rarely sustain it (7%) (Badesch et al., 2007; Hegewald et al., 2007).

The use of anticoagulation therapy has been controversial due to somewhat weak scientific evidence. However, it is recommended by the ACCP's most recent guidelines in IPAH and to be considered in PAH in association with other underlying processes to prevent micro pulmonary vascular thrombosis and prolong life (Badesch et al., 2007; Nauser et al., 2001). Warfarin is the most common drug of choice, requiring an INR in the range of two to three. Diuretics are used to control edema, decrease fluid volume and hepatic congestion (Berkowitz & Coyne, 2003). Regular blood tests for electrolytes, BUN and creatinine are necessary to monitor for hypokalemia and renal insufficiency.

Non-pharmacological interventions are directed toward reducing volume overload and maximizing exercise capacity. Low-salt diet (< 2000 mg/day if in heart failure), fluid restriction (< 2 L/day), and careful use of diuretics reduce volume overload. This must be carefully managed as preload should not be so low as to further reduce cardiac output. Symptom-limited exercise is also recommended. Recent studies in Germany have found benefit from a closely monitored and carefully planned cardiopulmonary rehabilitation program as an adjunct to appropriate medical therapy in patients with PAH who are capable (Mereles et al., 2006).

Lung transplant remains an option for select patients. The decision to list for transplant is made when functional status and hemodynamics decline to the point where survival without transplantation is likely to be compromised (Orens et al., 2006).

Clinical research in treatment for PAH has exploded in the last 10 years. There are currently more than 400 trials on pulmonary hypertension. Canadian researcher Dr. Duncan Stewart is conducting landmark gene therapy trials in Canada.

Nursing implications

A comprehensive history is an important way to screen those at higher risk for pulmonary hypertension. Vague or common symptoms such as dyspnea, chest pain, fatigue, and syncope need to be assessed in light of other risk factors (Budev et al., 2003). A detailed history should include use of prescription and non-prescription drugs, herbal remedies, illicit drugs, and appetite suppressants. Past medical history should identify pulmonary thrombosis, hepatic disease, lung disease or congenital heart disease.

Patients require education about the disease process and treatment. Counselling should include information regarding healthy lifestyle, diet, smoking cessation, activity level, managing anxiety and depression, and avoidance of some over-the-counter medications and herbal remedies. All patients should be advised to receive the influenza vaccine. Exercise and activity level is guided by symptoms. Patients should not exercise to the point of having symptoms of lightheadedness, chest pain or severe shortness of breath (Pulmonary Hypertension Association, 2007). Patients should be counselled to avoid high altitudes, and consider discussing oxygen therapy with their PAH specialist when flying since cabins are pressurized at 1500–2500 m (Berkowitz & Coyne, 2003).

Patients need to avoid temperature extremes such as hot showers and saunas, which may enhance vasodilation. Over-the-counter medications such as decongestants containing pseudoephedrine may worsen vasoconstriction. Herbal remedies such as Ephedra (mahuang), don quai, St. John's Wort, and ginseng may increase or decrease the action of CCB, affect digoxin levels, and decrease the effect of warfarin levels (Berkowitz & Coyne, 2003). Pineapple extract has also been found to cause liver enzyme elevation.

Pregnancy is contra-indicated in women with PH as it carries a 30% to 50% risk of death (Pulmonary Hypertension Association, 2007). Birth control is therefore critical for women, with the knowledge that the birth control pill may worsen pulmonary hypertension (Phillip, 2000).

A major nursing consideration is the initiation of intravenous epoprostenol or IV/SC treprostinil. This is generally done in PAH specialty centres by PAH nurses. Prostacyclin therapy is initiated and titrated in hospital over a period of several days. Dosing is individualized and based on signs and symptoms, as well as side effects of the medication (Widlitz et al., 2007). Nursing skills include evaluating signs and symptoms of PH, managing side effects and caring for a central venous line (Widlitz et al.). Blood pressure, heart rate, heart rhythm and O2 saturation levels need to be monitored every 15 minutes with titration. Especially in the case of epoprostenol, the infusion should never be stopped abruptly due to potential rebound pulmonary hypertension. As this therapy is long-term and managed by the patient and family at home, in-depth teaching is required on sterile mixing techniques, aseptic central line dressing changes, pump management and monitoring of signs and symptoms of PH and level of side effects including hypotension, syncope and pre-syncope. Patients should be given access to a 24-hour emergency telephone number to call with questions or concerns and should be instructed on how to seek emergency care and

what information to give if necessary (Widlitz et al.). Some areas register their patients on home prostacyclin infusions with emergency health services so that medical personnel are aware of the potential side effects. Regular home nursing visits are recommended to assess the home environment for safety and cleanliness, and to avoid potential complications of therapy, such as sepsis, through initial monitoring of the preparation process in the home (Widlitz et al.). Clinic follow-up is recommended weekly initially, then every one to three months with a chest x-ray, echocardiogram, walk test and a right heart catheterization if RV failure exists (Adiutori, 2000).

PH is a chronic disease that has the potential to adversely affect the quality of life for patients and family members. Nurses are well-positioned to monitor patients for anxiety and depression and to assess coping skills, family support and quality of life issues while providing education and emotional support as needed. Often, referral for psychological counselling becomes necessary for patients and/or family members as they deal with this very difficult disease in their daily lives. Flattery, Pinson, Savage and Salyer (2005) conducted a qualitative study on 11 patients living with PH and discovered two over-arching themes. They found there was uncertainty associated with this disease, but also an ability to learn to cope with this uncertainly and move on with their lives.

A Canadian perspective

There are approximately 15 specialized PAH centres in Canada. These centres employ nurses and physicians of at least one discipline of cardiology, respirology and rheumatology. Other medical and allied health professionals are involved in the care of these patients, usually on a consultant basis, (cardiovascular surgery, transplant team, social work, nutrition, psychology, physiotherapy). Programs are generally coordinated by nurses and/or nurse practitioners who are responsible for ensuring patients and families have proper access to care while understanding their disease, treatment and required lifestyle changes.

One very important part of the nurse coordinator role is to help patients navigate the system. Access to pharmacotherapies proven to decrease mortality and/or improve symptoms of PAH is essential. According to the 2005 Canadian Cardiovascular Society and Canadian Thoracic Society position statement, to meet recommended national standards, "...these medications must be available and financially supported within all provincial formularies across Canada in a timely fashion" (Langleben et al., 2005, p. 306). There has been little progress in the development of a national pharmacare strategy for Canadians, and coverage of PAH-specific medications is different in every province. These inconsistencies pose significant challenges for PAH patients moving from one province to another. Very often, patients must apply for compassionate drug coverage from industry when available and, in some cases, patients have to go on social assistance in order to obtain medication coverage.

As nurses, we are cognizant of the importance of patient support. The Pulmonary Hypertension Association (PHA) in the United States is a large patient support group that provides patient support in the form of web and written information, telephone support, discussion forums, and regional, national and international conferences. PHA also provides crucial PAH awareness and education for health professionals.

The newly formed PHA Canada promotes awareness and provides support to Canadians with PAH. Canadian PAH expert, Dr. Sanjay Mehta, and wife Linda Arsenault of Millennium Medical Communications have created a website, www.livingwithph.ca, which provides information about PAH to patients and families, and identifies the location and contact information of PAH centres in Canada.

Conclusion

PH is a chronic progressive disease that is often associated with other illnesses. Knowledge of common presenting symptoms, usual physical findings and diagnostic testing may assist in early diagnosis and treatment. Though historically there has been little clinicians could do for patients with this disease, new treatment strategies are constantly emerging as ongoing clinical trials investigate therapies to reverse the pathogenesis of this disease.

Nurses are in an excellent position to assist patients and families to navigate the system from diagnosis to treatment while sharing knowledge of medications, side effects and lifestyle alterations. As treatment options change, nurses must continually assess the impact of PH on quality of life. Monitoring coping skills and providing patient and family education and support will assist patients in dealing with this difficult disease. ™

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Clinical Practice Questions

1. Pulmonary hypertension (PH) is a progressive disease defined by significantly elevated pulmonary arterial pressure. Which of the following has not been associated with the development of PH?
a) connective tissue disease
b) chronic obstructive pulmonary disease
c) left sided atrial or ventricular heart disease
d) gastric bypass surgery

2. All of the following are predictors of poor prognosis in PH except:
a) low six-minute walk test distance
b) New York Heart Association Functional Class I or II
c) reduced cardiac index
d) elevated right atrial pressure

3. Which underlying pathophysiological factor is thought to be most responsible for initiating the development of PH?
a) formation of plexiform lesions
b) pulmonary vascular remodelling
c) endothelial dysfunction
d) neurohormonal alterations

4. Jane is a 55-year-old with a history of hypertension and smoking. She has been progressively more short of breath over the past few months. Which of the following will be most helpful in establishing a diagnosis of PH?
a) cardiac catheterization
b) pulmonary function tests
c) echocardiogram
d) chest x-ray

5. Jane's pulmonary artery systolic pressure is 60 mm Hg and she is referred to a PH clinic. Severe PH is often linked to which of the following?
a) collagen vascular disease
b) thyroid disease
c) chronic pulmonary thromboembolism
d) a and c
e) b and c

6. As the PH clinic nurse, which non-pharmacologic approaches will you need to discuss with Jane to assist her in managing her disease?
a) sodium restricted diet
b) smoking cessation
c) managing activity levels
d) avoiding over-the-counter and herbal remedies
e) all of the above

7. Which of the following physiological responses is not a goal of current pharmacological therapy for PH?
a) lowering pulmonary vascular resistance
b) direct vasodilation
c) increasing uptake in endothelin receptors
d) decreasing platelet aggregation

8. Risks associated with epoprostenol therapy include:
a) severe pain at the infusion site
b) central venous catheter sepsis
c) thromboembolic events
d) b and c
e) all of the above

9. Patients taking the oral endothelin receptor antagonist bosentan require monthly monitoring of?
a) liver function
b) renal function
c) Hgb A1C
d) CRP

10. Psychosocial challenges for patients with PH include?
a) lack of financial support for expensive drug therapies
b) decreased quality of life
c) anxiety and depression
d) all of the above

POSITION STATEMENT

Advance Care Planning and the Role of the Cardiovascular Nurse

Preamble

This position statement was created in response to a need identified by cardiovascular nurses from across Canada for greater clarity about the role of cardiovascular nurses in advance care planning (ACP). It was developed in collaboration with cardiovascular nursing and ACP experts from across Canada. It is intended to inform and guide cardiovascular nursing practice and to ensure all cardiovascular nurses understand the importance of ACP in the delivery of client[1]-centred care.

The core principles were adapted from the Canadian Council of Cardiovascular Nursing (CCCN) practice framework (CCCN, 2009) and the values statement was adopted from the Canadian Nurses Association (CNA) code of ethics (CNA, 2008a).

Background

The Canadian Hospice Palliative Care Association [CHPCA] (2012) defines ACP as the development and expression of wishes for the goals of medical treatment and the continuation or discontinuation of such treatment and care. It involves discussions with family and friends with whom the person has a relationship, and may involve healthcare providers, and/or lawyers who may prepare wills and powers of attorney. Advance care planning also involves naming a substitute decision maker. (p. 2)

Yet, ACP is more than the consent for and/or refusal of treatments. It is a process of reflection and communication of values and beliefs, and development and expression of wishes for care. Cardiovascular nurses have an important role to play in ACP. Nurses are considered trusted professionals, as evidenced by 88% of Canadians reporting that they are comfortable talking about end-of-life care wishes with nurses (CHPCA, 2014). As such, they are well-positioned to discuss values-based ACP and provide information and ongoing support.

The CCCN standards of cardiovascular nursing practice (2009) highlight the core concepts of partnership and quality of life within the paradigm of caring. The standards state that relationships with clients are based on respect, authentic communication, cooperation, and confidentiality.

Our position is that all cardiovascular nurses should encourage clients to engage in ACP. ACP should be a normal process for all, and integrated into everyday practice. Therefore, all cardiovascular nurses should be aware of the value of ACP and understand their role, as outlined in this position statement.

Core Principles

As many cardiovascular conditions are chronic in nature, CCCN believes ACP dialogue needs to begin at time of diagnosis. CCCN also recognizes that ACP is a dynamic process that is subject to revisions over time, for example, when clients are faced with a decline in health or offered new treatment and/or interventions. An early introduction to ACP provides clients ample time to think about their goals and preferences of care, and to make decisions in collaboration with their support system, cardiovascular nurse, and interprofessional team. Our goal is to ensure that our clients are informed, satisfied with current decisions, and aware that decisions can be revisited.

Core Values

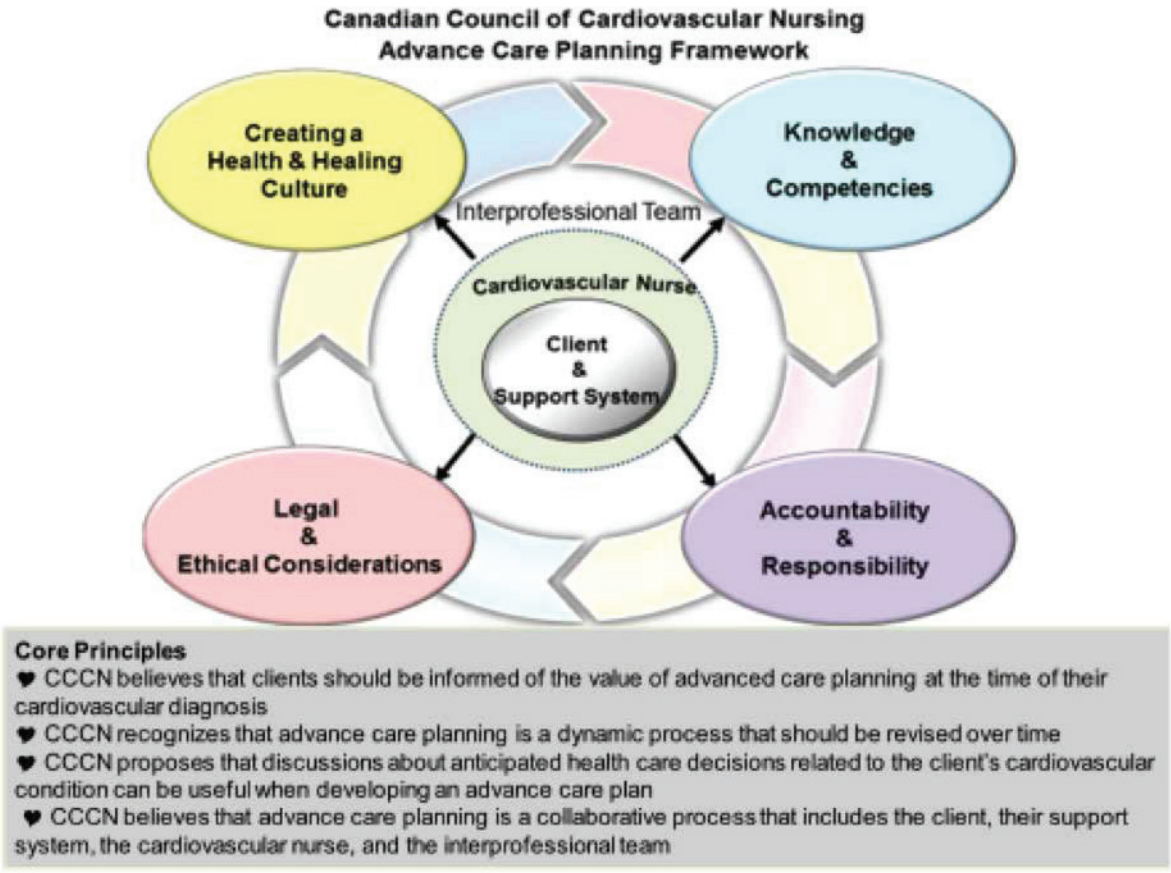
CCCN values the provision of safe, compassionate, competent, ethical care that respects and advocates for the client's desired goals (CNA, 2008a).

Framework

The conceptual framework below represents the key elements that guided the development of this position statement. The four domains: a) creating a health and healing culture, b) knowledge and competencies, c) legal and ethical considerations, and d) accountability and responsibility were identified as foundational to the profession of nursing. These domains were selected to align with provincial nursing regulatory professional standards, the CNA code of ethics (2008a), the CCCN standards framework (2009), and the guiding principles from the Canadian Hospice Palliative Care Association ACP national framework (2012). CCCN believes these domains capture the foundational principles and essence of cardiovascular nursing practice in Canada. Each domain within the framework identifies goals and key messages to guide cardiovascular nursing practice.

The client and his/her self-identified support system

[1] Client is used throughout this document and refers to the patient and his/her self-identified support system. Client encompasses all individuals across the lifespan, from pediatrics to geriatrics, and is inclusive of all backgrounds, religions, cultures, socio-economic status, and sexual orientation.



is at the core of the framework. The support system can include anyone with whom he/she wishes to share the ACP decision-making process (e.g., family, close friends, and members of the interprofessional team). The cardiovascular nurse enacts the four domains in the process of care. The client then becomes empowered to engage in ACP.

Domains of Practice

Creating a Health and Healing Culture

CCCN believes the client has the right to be cared for in a culturally safe environment[2]. To facilitate ACP discussions, the health and healing environment must incorporate the client's preferred cultural values, beliefs and rituals (British Columbia's Heart Failure Network [BCHFN], 2013). Creating a health and healing culturally safe environment for clients must be more than just a checklist of ethnic preferences (BCHFN, 2013). For the cardiovascular nurse it includes an awareness of self, active listening, knowledge of the potential for power imbalances, and empathy (BCHFN, 2013). It is also important to ensure the nurse is aware of the cultural differences within a specific group and how the differences can affect the ACP discussion. Awareness and integration into practice of these beliefs ensures the cardiovascular nurse facilitates the ACP discussion within the health and healing culture domain.

Goals

- Create a culturally safe environment and engage in culturally safe communication and nursing care.
- Respect and support clients' meanings of health.
- Encourage clients to ask questions, explain their circumstances, and express their personal preferences.
- Ensure all interactions/discussions and decisions are in the best interest of the client.
- Engage in shared decision-making to ensure that clients are informed and involved in decisions about their treatment options.
- Respect the culturally and individually diverse needs (social, spiritual, lifestyle, gender, mental and physical abilities, socioeconomic, etc.) of the client when establishing an ACP.
- Be culturally sensitive to clients' values and beliefs surrounding living, illness, death, and dying and be responsive to their needs.

[2]Environment can mean all types of environments (e.g., community, primary care, emergency, acute care, palliative care)

Key Messages

- Cardiovascular nurses understand and respect their clients' cultural preferences.
- Cardiovascular nurses understand how imbalances in power can affect the ACP discussion.
- Cardiovascular nurses need to set aside their personal values or beliefs.
- Cardiovascular nurses facilitate supportive conditions for ACP discussion within the context of the interprofessional team and organizational environment.

Knowledge and Competencies

Advocacy and education are core nursing roles in ACP that support clients' self-determination, and ensure that their health care preferences are elicited and respected (Black, 2006; CNA, 2008b). It is essential that nurses acquire the necessary competencies through academic studies, professional continuing education, organizational position statements and reports to effectively inform and advocate for clients through the ACP process. Examples of supporting documents include, but are not limited to, CCCN's nursing standards (CCCN, 2009) and the ACP in Canada national framework (CHPCA, 2012).

Commonly reported barriers to nurses' engagement in ACP are a lack of knowledge, skills, and comfort with discussions that pertain to end of life (Pere, 2012). To promote proficiency, the acquisition of specialized knowledge about the natural progression of cardiovascular disease processes; communication skills; cultural, legal and ethical considerations; and familiarity with provincial and territorial legislation on consent and ACP can best prepare a cardiovascular nurse to facilitate meaningful ACP dialogues.

Developing an ACP with clients is a collaborative process (CHPCA, 2012). ACP not only includes the provision of information, it is also a relational process in which nurses create partnerships with clients to elicit and understand their values, beliefs, and preferred goals of care Knowledge of a client's needs, developmental stage, and level of readiness are required to develop a relevant and meaningful ACP. When caring for anyone with cognitive limitations, cardiovascular nurses must determine their degree of understanding of living well, death, and dying. This applies when working with children. Knowing how to assess and document decisional capacity and when to involve the interprofessional team to agree about the client's capacity are also essential. Persons who are deemed unable to make their own decisions should participate in decision-making to the level they are able (Dempsey, 2013).

Cardiovascular nurses hold specialized knowledge about cardiovascular disease that should be shared with the client. This does not extend to conferring a diagnosis or prognosis.

Goals

- Acquire and integrate specialized knowledge of cardiovascular conditions in ACP discussions, as it relates to disease trajectory, treatment options, and care management.
- Advocate for clients' self-determination and ensure that their ACP preferences and goals are elicited and respected.
- Educate clients about ACP, as it relates to their cardiovascular condition.
- Create partnerships with clients to elicit and understand their values, beliefs, and preferred goals of care.
- Identify our own personal knowledge gaps about ACP and end-of-life planning and seek education and guidance where appropriate.

Key Messages

- All cardiovascular nurses should be aware of the value of ACP and encourage their clients to develop ACP.
- Cardiovascular nurses must acquire knowledge and competencies, as they relate to cardiovascular care and ACP that will best support their clients in the process.
- Knowledge and competencies are not limited to specialized cardiovascular knowledge, but also include client-specific knowledge. This includes an understanding of whether the client accepts and understands his/her prognosis, the client's decisional capacity, his/her values and preferences, and his/her wishes and expectations for care.
- ACP should be available to all clients along the trajectory of their cardiovascular condition.

Legal and Ethical Considerations

In Canadian law, persons with capacity have the right to make verbal or written advance care plans that provide instructions about their wishes. Capacity is commonly defined as the ability to understand information that is relevant to making personal care/health care treatment decisions and the ability to appreciate the consequences of a decision, including the decision to decline treatment (Canadian Nurses Protective Society [CNPS], 2009; CHPCA, 2012; College of Registered Nurses of Nova Scotia [CRNNS], 2013). Capacity and quality of life are dynamic. Therefore, goals of care require frequent review. Given nurses' ongoing and continuous presence with clients in a variety of practice settings, they are uniquely positioned to collaboratively review and revise their clients' informed wishes. Long-term interactions with clients in a variety of practice settings provide opportunities to review and revise clients' wishes based on the most current health care information available to them (CNA, 2008b).

Cardiovascular nurses must advocate for a client's right to autonomy. Clients' wishes and health care choices must be honoured (CNA, 2008a, 2008b). As knowledge translators, nurses must provide unbiased health care information to clients. Education is individualized to ensure that clients fully understand what the treatment entails including risk/benefit scenarios and prognosis (CNA, 2008a).

Substitute decision makers (SDM) are designated by the client or court to make health care and/or personal care decisions when the client is incapable of doing so (CHPCA, 2012; CNPS, 2009; CRNNS, 2013; Vogel, 2011). When the client is no longer capable of making those decisions, cardiovascular nurses must respect the client's previously expressed wishes or instructions and advocate for these when the SDM is making the decisions. If the client's wishes are unknown, the cardiovascular nurse must be aware of provincial or territorial laws for consent and ACP legislation in order to identify who can make medical decisions on behalf of the client (i.e., proxy).

Goals

- Recognize the client's capacity to make decisions related to his/her care.
- Elicit and respect the client's ACP goals and preferences.
- Provide clients with individualized information they need to make fully informed personal and health care treatment decisions.
- Ensure that clients have given informed consent for any care or service provided.
- Advocate for the client when the SDM is involved by respecting any previously known wishes or instructions.
- Refer to provincial legislation regarding SDM.
- Cardiovascular nurses function within their own level of competence within the legally recognized scope of practice.

Key Messages

- Clients have the right to have consistent information about cardiovascular disease, prognosis, and the benefits and risks of interventions.
- Cardiovascular nurses must advocate for and support a capable person's decisions regarding his/her health and well-being.
- ACP may involve the expression of wishes in writing, verbally, or by other forms of communication. In some jurisdictions, it involves the creation of a written directive, which may take effect when the person lacks the capacity to make decisions. This may include the appointment of an SDM.
- Cardiovascular nurses should be cognizant of the laws that govern ACP in the province or territory in which they are employed, and with current policies at their institutional/governance bodies with regard to age of consent, SDM and the type of documents that are recognized. A lawyer may not be required to create an ACP or advance directive, but may be helpful in explaining issues of consent, capacity and choosing a SDM.
- Cardiovascular nurses are guided by the CNA code of ethics and/or their professional regulatory college and association.
- Cardiovascular nurses function within their own level of competence within the legally recognized scope of practice.

Accountability and Responsibility

In accordance with the CNA (2008a) *Code of Ethics,* the CCCN believes that cardiovascular nurses "… are accountable for their actions and answerable for their practice" (p. 18). Discussing ACP with clients can be a sensitive and personal experience both for the client, as well as the cardiovascular nurse (Hospice and Palliative Nurses Association, 2011). Cardiovascular nurses recognize that clients have the right to make decisions about their health care. Advanced directives are legal documents that carry significant weight and cardiovascular nurses must honour clients' wishes in keeping with their respective jurisdictional professional standards, laws and regulations, as well as their own personal beliefs and values (CHPCA, 2012; Regina Qu'Appelle Health Region, 2011).

Goals

- Communicate any change in a client's treatment goals/wishes to the interprofessional team.
- Respect a client's right to assess his/her quality of life and make health care and end-of-life decisions, as he/she deems acceptable.
- Enter into a respectful and supportive therapeutic relationship to support the client in his/her decision-making process.
- Interact with clients honestly and with integrity when discussing clients' wishes.
- Preserve dignity, confidentiality, and privacy of the client.
- Provide individualized client information regarding pharmacological, medical, and nursing care procedures. This may be in addition to and different from standard client education materials.
- Recognize that ACP is deeply personal to the client and is based on his/her own personal values and beliefs.
- Engage in personal reflection regarding one's beliefs and values in order to engage in a meaningful and respectful discussion with clients.
- Identify personal limitations, disclose any potential conflict of interest, and seek help from a supervisor or employer to arrange for alternate care arrangements for their clients, in cases where they feel unable to support a client's wishes.
- Communicate any changes in client treatment goals/wishes to the interprofessional team.
- Document interactions and client wishes on client's chart.

Key Messages

- In order to create a meaningful and supportive environment, cardiovascular nurses must reflect on their own beliefs and values.
- Include the client and SDM (if appropriate) in all decisions regarding nursing care.
- Cardiovascular nurses support clients in their right to make health care and end-of-life decisions.
- In the event of conflict of interest between the cardiovascular nurse's beliefs and values and the client's wishes, the cardiovascular nurse must make alternate arrangements to support the client in his/her decision-making.

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Column of Courage

Welcome to the column of courage, a new and exciting addition to the Canadian Journal of Cardiovascular Nursing. As your president, I have the honour and privilege to work with so many inspiring and exciting nurses across Canada and I wanted to share that with our members.

On November 6, 2015, I had the pleasure of interviewing Dr. Paula Price, Registered Nurse, Mount Royal University, Calgary, Alberta.

Can you describe how a 30-plus-year career in nursing has shaped you, as a person?
"What I have learned is that everyone has a story. Everyone is coping with something past or present: an acute or chronic illness, a family member with a problem, or challenges with any of the determinants of health. Often, others are coping with something far worse than I am. From this, I have learned about caring and listening to people and taking nothing for granted. So, I hope that nursing has made me a kinder, gentler, compassionate person after all of this time. I have also become a person who pays attention to details and strives for excellence in whatever I undertake. I think my determination to challenge myself and reach for opportunities to help others, whether in practice or scholarship, has been fostered during my career by the incredible nurses I have met over the years."

Paula's wish of being a kinder, gentler soul has certainly been fulfilled—she is a role model and mentor for many.

On the topic of mentorship, how does it make you feel to hear colleagues describe you as "accomplished and sincere with a unique ability to instil passion in nurses of all ages?"
"I am honoured to hear that. I have been teaching for 26 years and when I am with students my goal has always been to create an environment conducive for learning by sharing my own passion about cardiovascular and critical care nursing. Nursing is an exciting profession and I want to instil that in nurses. Nurses are in a very privileged position. Just think about what we do and the impact we have on our patients and their families. Also, very few other professions experience the changes and advances nursing has experienced in the last several decades. Consider the impact research has had on practice. Not only is nursing rewarding, it is also evolving. As for being accomplished and sincere, I have had some excellent role models during my career and I have taken on challenges that have made me grow and learn skills I never thought I possessed. I hope I am sincere, because I have always enjoyed what I do—whether at the bedside, in the classroom, or on a committee."

Although it may sound like a cliché, I am one of those nurses influenced by Paula's passion. I first met Paula at a CCCN board meeting and I left with the feeling of "Wow, I want to know more about this gal" and over the years I have only become more intrigued by her methodical approach to life and enjoy her 'voice of reason'.

Usually calm, quiet and collected, what would our membership be surprised to know about you?
"I make up silly songs and sing them to our dogs."

This made me laugh, yes even LOL, and during our interview Paula sang me one of her silly songs. I was overwhelmed with a feeling of friendship, one that only two nurses can share. It was humbling for me and I must say look out Celine Dion, you have competition!

Registered nurses, and in particular cardiovascular nurses, are in a pivotal position to…
"… make a positive difference in peoples' lives. Nursing's essential contribution to health and health care, regardless of role or setting, is based on what we do. We use evidence, nursing knowledge, critical thinking and skill to understand our patients' and families' responses to health and illness and then we assist them by improving, maintaining or restoring health in collaboration with them and the health care team. Nurses interact with patients and families in every practice setting, at every stage of life, and every day and night. We care for highly complex patient situations and see the responses of patients and families. The impact nurses have can be profound at the bedside, organization, policy, regulatory, or political levels."

Paula and I share the thought that nurses have extraordinary power, we just need strong leadership to unleash that power.

As a registered nurse with vast experience in the critical care and cardiovascular fields, how do you incorporate courage into your practice?
"I think it takes a lot of courage to take on a leadership role in a new venture, to try something new in the classroom or practice, or even to say 'I don't know.' To quote Winston Churchill – 'Courage is what it takes to stand up and speak; courage is also what it takes to sit down and listen.' There are so many times I have had to incorporate courage in my practice and professional life: when I spoke with a patient and his family about advance care planning when the patient's heart failure was becoming refractory to treatment, when I assumed the role of Provincial Director of the Alberta, Nunavut, and NWT Division of CCCN, when I assumed the role of Editor of the Canadian Journal of Cardiovascular Nursing, and when I went back to school to do graduate studies. To advance one's knowledge and practice, one needs to take a chance and that always takes courage. Nelson Mandela said 'Courage is not the absence of fear.' I think it is the ability to move forward despite the fear."

Paula, I wrote this quote for you: "Courage does not always have to roar; sometimes it is demonstrated in silence."

Graduate studies: can you share a summary of your thesis work with our members? How and what did you learn that can be applied to current nursing practice?
"Over the years I have conducted and published several research projects that have had an impact on nursing practice. The best example is the impact our study findings had on early ambulation after PCI many years ago now. We demonstrated that the standard six hours of bedrest after a PCI was not necessary and the practice at the hospital changed to four hours after we showed data on the safety of early ambulation. Since that initial study my research focused on the impact of other nursing interventions on critically ill patients' physiological status. While my doctoral study was not an interventional study to improve patient care, it did provide information about the physiologic effects of sitting our post-op cardiac surgery patients up for the first time after surgery.

Now, as my career is winding down, my scholarship interest is in helping others and reviewing others' work; specifically, participating in and coordinating conferences, and reviewing and editing the work of peers.

From my research and scholarship experiences, I have learned that nurses can make a difference in practice and provide the evidence for evidence-informed practice. Research has been the catalyst for improvements in care and health outcomes in all areas of nursing practice, education, and administration. It is important that nurses continue to build capacity for both doing research and translating research to practice for a strong system of knowledge production to inform nursing practice. With my research, it was rewarding to have a clinical question, conduct a study to find a possible answer, collect data and analyze it, and finally see an answer unfold. It is also rewarding to know that in some small way, we contributed to the body of nursing science knowledge."

I think it is interesting that Paula suggests she is helping others reach their potential, as her career is winding down. Paula, I think you have done this your entire career, you are just now beginning to enjoy the fruits of your labour.

Every program has a pioneer. Can you describe how it feels to be the longest standing faculty in the Advanced Studies in Critical Care Nursing program at Mount Royal University, Calgary, Alberta. What keeps you there?
"This is my dream job. When I started my career in the early 1980s, I completed the Critical Care Certificate Program at Algonquin College in Nepean, Ontario. I had an instructor who was an inspiration to me and I said to myself 'I want to be just like her.' She was an awesome teacher. I went on to work in critical care/CVICU for several years and when the ACCN program started in Calgary I applied and was hired to develop the curriculum and then teach in the program. This has been such a rewarding career and my colleagues and mentors have helped me develop my teaching, leadership, and scholarship skills. Over the years, our program has changed and evolved, going from an onsite program to distance and then offering special condensed programs for our partners in Edmonton, Brandon, Yellowknife, Fort McMurray, and Interior Health (we are nothing, if not flexible). We pride ourselves in keeping the curriculum evidence-based, so revisions are constantly being made to the content to keep it current. Over the 26 years we keep evolving and advancing, so I am never bored. I now work with several of our graduates and in the clinical area I see so many of my current and former students. It is gratifying to see their development and the impact they have on patient care. That really matters to me and it fills me with satisfaction and enthusiasm."

As an educator, I get excited to hear the enthusiasm in Paula's voice as she speaks of past and present students. For Paula, pride in profession is important, and I like that she instils that in others. Thank you.

And finally. What does this quote by Maya Angelou mean to you? "One isn't necessarily born with courage, but one is born with potential. Without courage, we cannot practise any other virtue with consistency. We can't be kind, true, merciful, generous or honest."
"I believe everyone is born with potential to lead a virtuous life. It takes courage to enact those attributes. It takes courage to open our eyes to what is around us and the conditions of some individuals and communities. To be truly present and cognizant of these should lead us to kindness, truth, mercy, generosity, and honesty."

Paula, I want to express my sincere gratitude for allowing me to open a window into your life. I am richer for the experience and I wish to recognize the courage it takes to answer my probing questions. Our members will also benefit from the wise words of an experienced nurse who loves her career more with each passing year. Thank you for being an inspiration to the members of the Canadian Council of Cardiovascular Nurses.

Submitted with Courage
Susan Morris
President CCCN

Notice

CCCN Annual General Meeting

Date: Friday May 24th, 2019

Time: 12:30 – 13h15

Fort Gary Hotel, Winnipeg, MB

On-line participation in the Annual General Meeting will be available. Details on how to participate will be sent out closer to the date of the meeting.

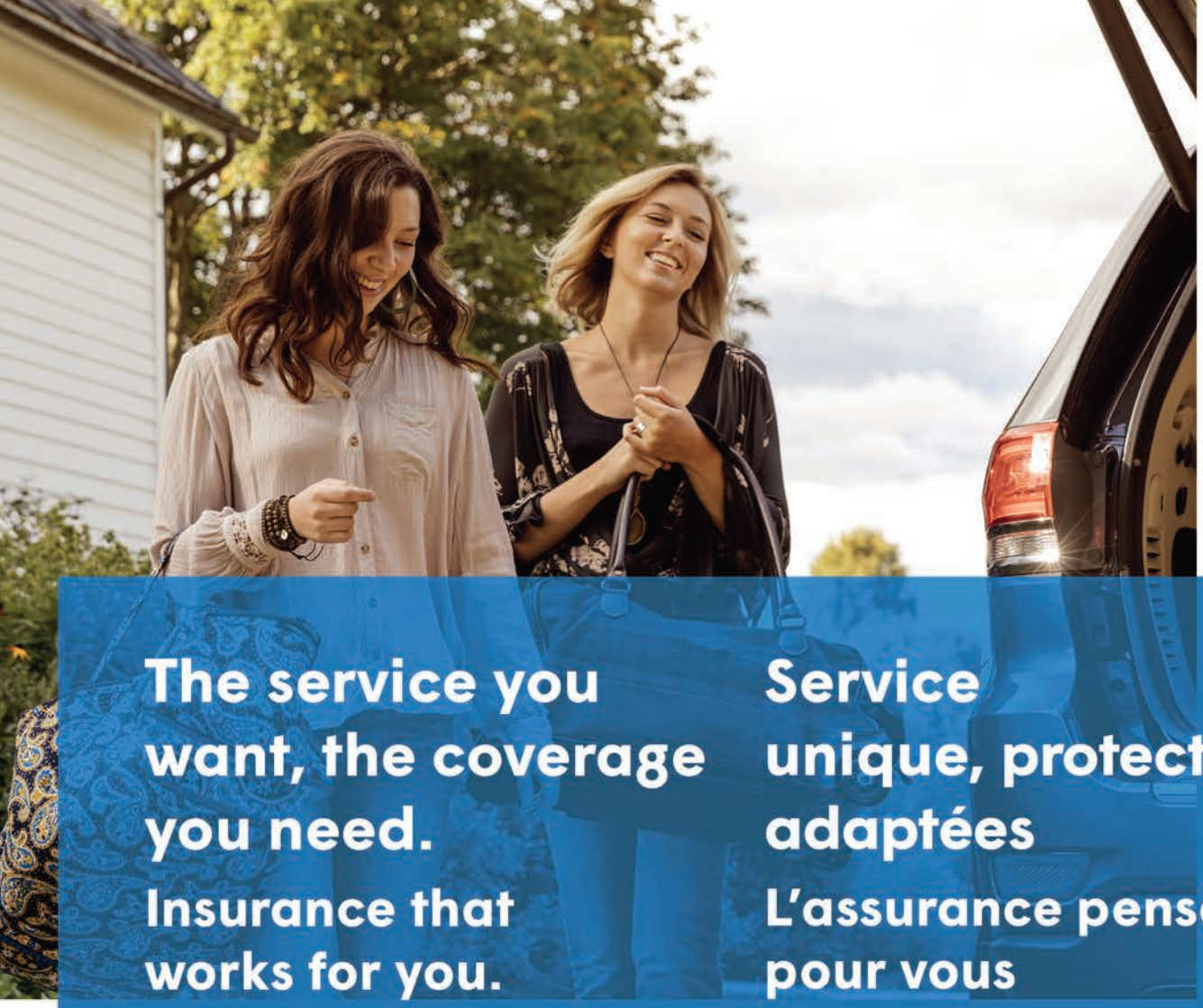
Avis

Assemblée généralle annuelle du CCIISC

Date : le 24 mai, 2019

Heure : 12 h 30 – 13 h 15

Lieu : Fort Gary Hotel, Winnipeg, MB



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