BEST PRACTICE

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DECEMBER 2009

Infectious gastroenteritis
Generalised anxiety disorder
HIV

Smoking associated cancers

bpac nz
better medicine

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Assessment and management of infectious gastroenteritis

Every year around 200,000 New Zealanders acquire a food associated illness. Gastrointestinal diseases account for the majority of all disease notifications in New Zealand. The majority of cases of infectious gastroenteritis are self-limiting and most people do not seek medical attention. When people do present, the key clinical issue is the prevention of dehydration. Empirical use of antibiotics is not usually indicated.

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Generalised anxiety disorder in adults – diagnosis and management

Anxiety disorders are the most frequently seen mental disorder in general practice and generalised anxiety disorder (GAD) is one of the most common types. GAD is often seen in people who also have major depression. Psychological and drug therapies are equally effective in the treatment of GAD but the relapse rate for psychological therapies may be lower. Selective serotonin re-uptake inhibitors are the first line option for drug treatment of GAD.

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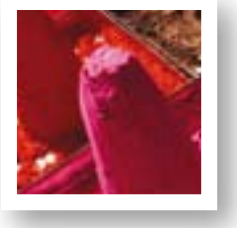

Non-occupational exposure to Human Immunodeficiency Virus (HIV)

Rates of HIV infection are increasing in New Zealand, especially among men who have sex with other men. GPs are often the first point of contact for people who have been exposed to HIV. Referral to an infectious disease specialist for post exposure prophylaxis may be appropriate in some cases. Regular HIV testing should be considered as a routine aspect of healthcare for people at risk of HIV exposure.

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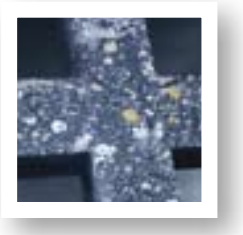

Smoking related cancer morbidity and mortality

Smoking contributes to approximately one in three cancer deaths in New Zealand.

Early detection and referral of smoking related cancers

The majority of people with cancer will initially present to general practice, therefore GPs have an excellent opportunity to make a difference with early detection and the initiation of speedy referral to specialist services. However, the difficulty is to achieve improved cancer detection without increasing unnecessary referrals, which may reduce access to services for people who need them.

Spotlight on lung cancer

Lung cancer is the fifth most common cancer in New Zealand, however it is the leading cause of cancer mortality in men and the second highest cause in women. Recognising lung cancer early is the key.

Supporting the PHO Performance Programme

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All web links in this journal can be accessed via the online version.

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It's better to give than to receive…

A Christmas message

It's better to give than to receive

It is good to be good to others. Of course virtue has its own reward, but doing something good for someone else can have benefits that are both psychological and physical. There is even scientific evidence to back this up.

Being altruistic is associated with a longer life expectancy. Several longitudinal studies of older adults have found that volunteering results in significant reductions in mortality. In addition, socially connected people generally outlive those who lead more isolated lives.

Philanthropy works too. Making a monetary donation activates an area in the brain that is responsible for dopamine-mediated euphoria – secret Santa anyone?

Helping others is often a necessary step in helping yourself. Researchers have found that recovering alcoholics, who help other alcoholics to achieve sobriety, are significantly less likely to relapse in the year following treatment.

In another study, women with breast cancer were assigned to a support group, to test whether this improved mood and rates of depression. Participation in the group included both giving and receiving support. At the end of the study, depression and mood were improved, but what surprised researchers was that the women in the support group survived twice as long as the women without support (18 months compared with nine months).

People employed in helping professions, such as healthcare professionals, have a head start in reaping the rewards of giving.

It's the thought that counts

The power of positive thinking

If all this do-gooding sounds like it takes too much effort, there is still hope. Just thinking about giving may be enough to reap the benefits. The "Mother Teresa" study demonstrated that physiological changes occur in response to virtuous thoughts. After viewing a film about Mother Teresa's work, a group of students displayed increases in immunoglobulin A, a protective antibody. These increases were significantly higher than those who watched a neutral film. Levels remained high for an hour after the film, and the researchers concluded that dwelling on positive thoughts strengthened the immune system.

But don't think bad thoughts

A cautionary tale for the Ebenezer Scrooge's among us – people who dwell on negative thoughts, or only think of themselves, are more likely to develop illness at an earlier age.

"The value of a person resides in what they give and not in what they are capable of receiving". – Albert Einstein

In a study of people with Type A personalities, high numbers of self-references in speech significantly correlated with heart disease, after controlling for age, blood pressure and cholesterol.

Hostility and negative emotional states among married couples are associated with longer times for wound healing. In one study, wounds took a day longer to heal after an argument than after a supportive discussion, and two days longer in those demonstrating high levels of hostility.

Bad bedside manner catches up with you in the long run. In a historical study of doctors at Duke University, hostility scores based on hostile emotions, attitudes and actions were calculated at age 25 years. At age 50 years, those who previously scored highly on the hostility scale, were four to five times more likely than those with lower scores, to develop coronary disease and seven times more likely to die of any disease.

Eat, drink and be merry

But all things in moderation

It is good to be good to others…but not too good. Excessive focus on others can have negative health consequences. "Empathic over-arousal" or "compassion fatigue" is often seen among people constantly exposed to situations requiring empathy and generous actions i.e. healthcare workers. It is essential that caring about others is balanced with caring for yourself. More volunteering does not necessarily translate into greater benefits.

The right dose, method and context of giving will vary from person to person. In life there are givers and there are receivers.

All good things come to an end

So the good news is that it's good to be good and thinking about being good might be good enough. However it's bad to be bad, but it's also bad to be too good.

Let's apply the "giving and receiving" theme to some of the articles in this edition:

Infectious gastroenteritis

It's better to give food than to receive it. Beware of the Christmas buffet, know where your food has been and how it has been prepared. Like your mother always told you, the safest option is the dish you brought yourself.

Discussing weight loss

It's better to give advice to your patients, rather than to fear receiving criticism because you are not perfect either. It's about the patient and how you can help them. In the process you may discover that you have climbed some of that hill to success yourself.

HIV and risky behaviours

It's better to give…now here it gets tricky on how to stay polite. Read the article and make your conclusions about risky behaviours and how to counsel your patients.

So here we give you our final edition of BPJ for 2009. While we don't expect to receive anything in return, we hope that you enjoy BPJ enough to join us on our journey next year… oh and receiving the occasional gratitude can't be too bad!

Merry Christmas and Happy New Year from the team at bpac.

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www.bpac.org.nz keyword: weightloss

THE BIG ISSUE

Discussing weight loss in general practice

NEW ZEALANDERS ARE GETTING FATTER. That's a fact. When a problem is getting worse, it is time to reassess the methods we are using to solve it. Is general practice addressing obesity and weight loss in the right way?

The biggest barrier that patients must overcome in losing weight is in owning up to the problem in the first place. This is much more achievable for patients who have a non-judgemental and supportive environment in which to do this. Do not mistake being fat for being ignorant - most overweight people know that being thinner is healthier, they just do not know how to achieve it.

Dr Robyn Toomath, Endocrinologist and spokesperson for Fight the Obesity Epidemic and Dr Gabrielle Ruben, GP and weight management specialist, speak about dealing with weight loss in general practice.

Obesity is reaching epidemic proportion worldwide. What is the situation in New Zealand and what do you see as the main reasons why this problem is getting worse?

It is estimated that over half of the adult population of New Zealand is overweight or obese. The National Children's Nutritional Survey 2002 identified that overall 29% of boys and 34% of girls in New Zealand were overweight or obese. This figure was even higher for Pacific children (52%), Māori children (41%) and children from the most deprived quintile (40%).

Dr Toomath notes that there has been an upward trend in obesity rates and she believes that most New Zealanders are now overweight or obese.

The reasons why obesity rates are increasing are complex and multifactorial. Both Dr Toomath and Dr Ruben place a large proportion of blame on the obesogenic environment in which we now live.

"People are living more sedentary lives. Work environments are stressful, people tend to eat on the run leading to bad food choices. Ipods, remote controls and cell phones all contribute to the inactive way in which we live. Media advertising of food can be seductive and young people are particularly vulnerable to this. Stress and depression also play a significant role in peoples' eating habits. Eating becomes habitual, providing comfort and is frequently not associated with hunger." – Dr Ruben

One of the most difficult challenges that primary health care providers face is when, and how, to bring up the issue of weight loss with patients. What advice can you give about this? Are there any particular communication methods that work best?

A non-judgemental, supportive and careful approach is imperative. People who are overweight or obese generally know so and often feel dismayed, frustrated, embarrassed, guilty and have poor self-esteem. A clinician who

disapproves, scolds and blames is likely to only succeed in making the patient feel worse and still not address the problem.

"I don't ever ask people to lose weight – I am more inclined to explain the drivers that have resulted in their being overweight so that the blame is shifted away from them as much as possible." – Dr Toomath

"I emphasise that I see the issue of being overweight as very much a medical problem which often has genetic predispositions. I define it as a disease type because I think this takes the heat out of the problem and removes moral judgements and allows patients to talk about the problem in a more relaxed way. We need to move away from the attitude that patients are weak, lazy or simply overeaters and be more supportive in helping them on what is a long term journey." – Dr Ruben

When to approach the matter of weight loss with patients should be individualised. It is important to know where a person is in time – are they still gaining weight or have they already lost a significant amount? Dr Ruben says it is important to find out the journey that the patient has been on, prior to coming to see you. She tends to avoid using the word "obese" with younger patients as it often makes them fearful or ashamed. Dr Ruben prefers to bring up the weight issue sooner rather than later. For example, if she sees that a child is gaining a lot of weight, it is helpful to speak to the mother about lifestyle and eating habits for the whole family. Depression and anxiety should be considered before raising issues about weight. Dr Ruben often waits for a cue from the patient that talking about weight is okay.

Often successful weight loss is achieved after a motivational trigger such as a medical scare. What motivational tools could be used by primary healthcare providers to initiate weight loss in overweight patients? Is there any evidence that discussing weight loss with patients actually works?

Dr Toomath does not believe that there is evidence that any sort of motivation from healthcare providers results in sustained weight loss.

Dr Ruben believes that there is evidence that discussing weight loss with patients can work. Impaired blood sugar or overt diabetes is usually a key trigger for people wanting to address their weight. Dr Ruben encourages small incremental steps and achievable weight loss goals, often starting with a single behaviour change, such as not eating after the evening meal. If the patient slowly begins to lose weight, then this acts as reinforcement, bringing about positive lifestyle change.

Discussing weight maintenance early is also important, says Dr Ruben. Self monitoring may include regular weight checks, pedometer use and keeping a food diary. Identify a key support person e.g. partner or close friend who can reinforce messages at home. Other tools that can be used are to avoid high risk situations with food and counter conditioning where an alternative is substituted for anxiety related eating. The patient can set personal goals and reward themselves when they have been achieved.

Most people would agree that weight loss is achieved by overall lifestyle changes, however food obviously plays an important role. What dietary advice should primary healthcare providers advocate? Low kilojoule? Low fat? Low carbohydrate? Low protein? Or is it up to the patient to find the diet that works best for them?

Dr Toomath prefers to emphasise exercise over food restriction. She advises patients to consume a wide range of low-calorie foods and fresh fruits and vegetables.

"No diet works best for weight loss. They all work in the short term and they all fail in the long term. I concentrate on people adopting a life-style that is optimal irrespective of their weight. Incidental or work-related exercise, e.g. walking to work or taking the stairs, is more likely to be

sustainable as a habit than recreational exercise e.g. going for a walk/run on nice days." – Dr Toomath

Dr Ruben tries to encourage everybody to learn to eat less. She thinks most New Zealanders eat too much, even of the right types of food. In general it does not make a difference what type of diet is adopted, it is just whether total energy has been reduced. Dr Ruben recommends a diet rich in fruit and vegetables, reduced animal fats and including protein in every meal or snack. Carbohydrates in the diet are fine, as long as they are not primarily derived from starch. Severely restrictive diets are not sustainable in the long term.

"I generally tell people don't start doing anything today or this week that you are not prepared to continue doing for the rest of your life". – Dr Ruben

As well as the types of food that are eaten, the time in which food is eaten is important too. Dr Ruben advocates planning a healthy late afternoon snack to combat poor food choices that often arise from people feeling vulnerable after long periods of not eating.

At what point are lifestyle, exercise and dietary advice not enough? When should pharmacological or even surgical interventions be considered?

Pharmacological aids such as sibutramine (Reductil) and orlistat (Xenical) may help some people with weight loss, but they are generally not considered first-line treatment.

"Pharmacology doesn't seem to have lived up to early promise. Metformin has been shown to produce sustained weight loss of 2 kg on average over a long period of time and is worth considering early in people with impaired glucose tolerance. I don't use the other drugs any more." – Dr Toomath

Both doctors agree that surgical intervention is a good option for some people.

"Surgery is a good option for those who have a life of obesity related problems ahead of them i.e. if they are young and otherwise fit but have type 2 diabetes and a BMI of 35 or if they have a BMI of 40 or more."– Dr Toomath

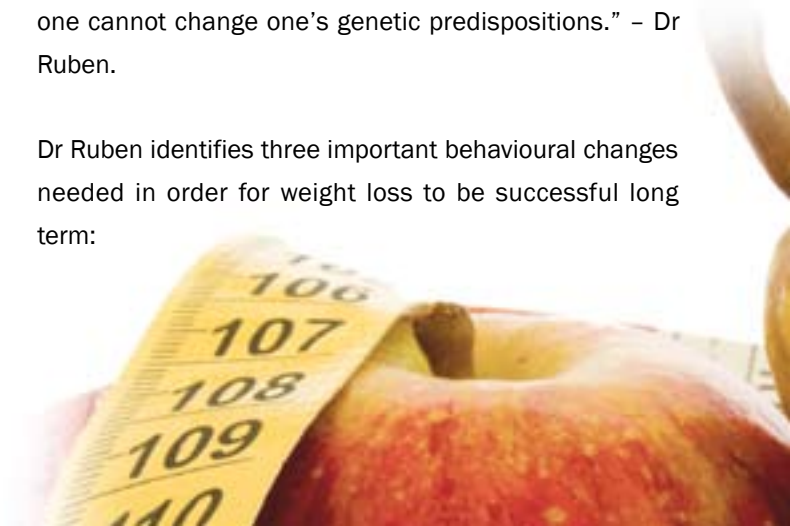
"Surgical intervention definitely has a place for those who have been obese for a very long time and who may also have serious complications associated with obesity such as severe hypertension, diabetes, heart disease, joint problems, obstructive sleep apnoea, musculoskeletal issues and most particularly, psychological problems. Of course there are risks associated with surgery but there are equally serious risks associated with chronic and severe obesity." – Dr Ruben.

Is "misuse of food" an addiction just like alcohol or drugs? Is there a role for behavioural therapy or counselling in achieving weight loss?

According to Dr Ruben there is definitely an important place for behavioural therapy and counselling in weight loss. Some of the thought processes that may assist with behavioural change have previously been discussed. Dr Ruben identifies body image as a key area in which counselling can be useful.

"Many people, particularly women, have a very poor body image and even when they lose weight, their body perception does not improve. They think 'well I have lost weight and I am still not happy with the way I look so I may as well eat like I did before'. Counselling or behavioural therapy can be useful to help people appreciate that their body weight and fat is only one aspect of themselves and one cannot change one's genetic predispositions." – Dr Ruben.

Dr Ruben identifies three important behavioural changes needed in order for weight loss to be successful long term:



1. To develop a healthy and positive attitude towards food
2. To address the problem of non-hungry eating
3. To address the problem of body image

Dr Toomath does not believe that "misuse of food" is an addiction that can be treated with behavioural therapy.

The final word...what is your key piece of advice for primary healthcare providers in overcoming the growing obesity epidemic?

"Become activists in support of your overweight patients. Treat them with compassion and petition the government to introduce public health measures to reduce the obesogenic environment." – Dr Toomath

"Look at families, look at children and try to help parents address problems sooner rather than later. Look at the environment in which the person lives, the family, the school and external influences via media and advertising. Look at animal fat, total energy and carbohydrate/protein balance. Emphasise the importance of daily activity – 30 minutes a day, four days per week is absolutely minimal. Be kind, be empathetic. Think of obesity both as a disease and as a symptom." – Dr Ruben

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Do patients listen to overweight doctors?

Do you expect a hairdresser to have a good haircut? Do you expect a teacher to know everything? Do you expect a gardener to grow the greenest plants? Do patients expect their doctor not to be fat?

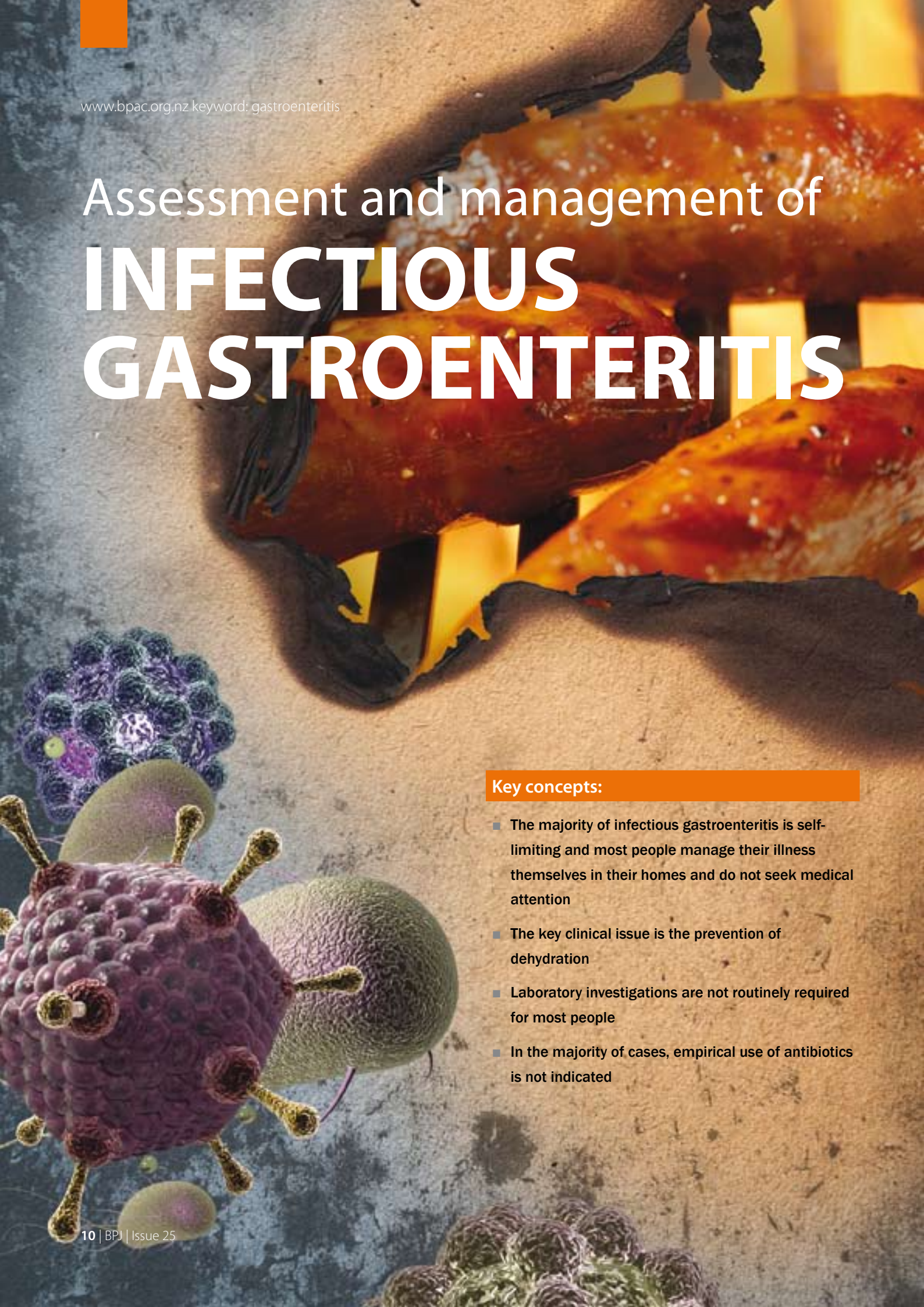
Recent debate has emerged in the US after Dr Regina Benjamin was appointed Surgeon General. She is highly accomplished in her field, extremely well qualified and capable of the job, however she is overweight. The choice of Dr Benjamin has been strongly criticised for sending the wrong message because she is a public figure responsible for, among other things, addressing the obesity problem in the US.

Does body size make a difference when delivering healthcare advice to patients? Are overweight doctors and nurses less likely to address weight issues in their patients? Are patients less likely to listen to advice from overweight healthcare providers?

A US-based study has found evidence that patients with non-obese doctors had more confidence in general health counselling and treatment of illness than those who had obese doctors. Interestingly, there was no significant difference between the two groups in confidence in weight and fitness counselling.[1] Another study found that clinicians who watched their own diets vigorously were more likely than other clinicians to calculate BMI for obese patients (42% vs. 13%).[2]

Healthcare professionals should not shy away from addressing and promoting discussion around a patient's weight purely because they are embarrassed about their own size. In fact, patients may feel more comfortable receiving advice from a person whom they can relate to and who may even share similar struggles.

Assessment and management of INFECTIOUS GASTROENTERITIS



Key concepts:

- The majority of infectious gastroenteritis is self-limiting and most people manage their illness themselves in their homes and do not seek medical attention
- The key clinical issue is the prevention of dehydration
- Laboratory investigations are not routinely required for most people
- In the majority of cases, empirical use of antibiotics is not indicated

Spring and summer bring warmer weather, relaxed outdoor eating, camping and an increase in cases of food associated illness. Every year about 200,000 New Zealanders acquire a food associated illness and rates are higher than in other developed countries.[1]

Gastrointestinal diseases account for the majority of all disease notifications in New Zealand, however notified cases are only the tip of the iceberg. Most cases of acute gastrointestinal illness (from any cause) are self limiting and only a proportion of people require a visit to a GP. Complications occur in a small number of cases (see sidebar). People who are at extremes of age, have co-morbidities or who are immunocompromised are especially at risk.

Causes of infectious gastroenteritis

Causes of infectious gastroenteritis in New Zealand are listed in Table 1. Campylobacter is the most frequently identified pathogen followed by Salmonella and Giardia. Norovirus is commonly associated with outbreaks of vomiting and diarrhoea in institutions, cruise ships and after social functions.

Acute complications from infectious gastroenteritis

- Dehydration and electrolyte disturbance
- Reduced absorption of medications taken for other conditions (including oral contraceptives, warfarin, anticonvulsants and diabetic medications)
- Reactive complications e.g. arthritis, carditis, urticaria, conjunctivitis and erythema nodosum
- Haemolytic uraemic syndrome (acute renal failure, haemolytic anaemia and thrombocytopenia)

Table 1: Causes of infectious gastroenteritis in New Zealand[2]

Bacterial	**Protozoa**	**Virus**
Campylobacter	Giardia	Norovirus
Salmonella	Cryptosporidium	Rotavirus
Yersinia		Enteric adenoviruses
Shigella		
E coli O157		
Vibrio		
Listeria		
Clostridium difficile		

Identifying pathogens

Identification of the pathogen may be useful in some cases such as in people who may require treatment with an antibiotic, to avoid the spread of infection to others or to identify any food source that could be a public health risk.

If identification of the pathogen would be useful, ask about:[2]

- Changes to normal diet, in particular food from different sources, alternative water sources, consumption of unsafe foods such as raw or undercooked meat, unpasteurised milk (*E. coli* O157, *Salmonella sp*., *Campylobacter sp*., *Giardia sp*., *Listeria monocytogenes*) and raw seafood (*Vibrio sp*.)
- Contact with other unwell people (*Shigella sp*., *E. coli* O157, *Salmonella sp*., *Campylobacter sp*., *Giardia sp*.)
- Attendance or employment at a day-care centre (Rotavirus), cruise ships, institutions (Norovirus)
- Recent hospitalisation or use of antibiotics (*Clostridium difficile*)
- Swimming in fresh water lake, river or swimming pools (*E. coli* O157, *Salmonella sp*., Campylobacter *sp*., Cryptosporidium)
- Recent visits to farms, petting zoos or contact with pets with diarrhoea (*E. coli* O157, *Salmonella sp*., *Campylobacter sp*., Cryptosporidium)
- Travel to a developing country (wide range, mainly enterotoxigenic *E.coli*)

There are seasonal peaks related to different pathogens e.g. summer peaks of *Campylobacter sp*., spring peaks of Cryptosporidium.

Food associated illness can be prevented

Good food handling and hygiene principles remain the key to prevention.

The New Zealand Food Safety Authority (NZFSA) has run two key campaigns recently – promoting the four 'Cs' (clean, cook, cover and chill) and the 20+20 rule (wash hands for 20 seconds and dry for 20 seconds).[1]

The four 'Cs' of food safety.[1]

Clean: food preparation areas, utensils, equipment and yourself.

Cook: raw foods well and leftovers until steaming hot. Ensure minced meat, chicken and sausages are cooked thoroughly.

Cover: all foods in the fridge, cupboard and outdoors. Separate and store raw and cooked foods so there is no chance of cross-contamination.

Chill: store ready-to-eat foods between 0–4°C. Any leftover cooked food should be covered and chilled (within two hours).

Patient information is available from:
www.nzfsa.govt.nz/publications/publications-all-booklets-a-z.htm

The NZFSA has also produced a guide providing up-to-date advice on food safety for Marae – Te Kai Manawa Ora. Sharing kai is a core element of Māori culture, and the marae is often the centre of this experience. The guide aims to help maintain the mana and dignity of marae cooks by providing them with hints and tips for keeping food safe.

The guide is available from:
www.nzfsa.govt.nz/consumers/Māori-pacific-other-cultures/marae-food-safety-guide/

Resources about safe food handling and regulations for food handlers can also be found on the NZFSA website. If food handlers have symptoms of infectious gastroenteritis, they should be excluded from work until they have been asymptomatic for at least 48 hours, to prevent transmission of infection.

History provides a guide to further management

Patient history should aim to elicit information on the severity of the illness and may also provide clues which will help identify the pathogen.[2,4]

Consider:

- Frequency and duration of diarrhoea or vomiting
- Recent fluid intake and urine output
- Characteristics of the diarrhoea e.g. presence of blood or mucous
- Any other symptoms, in particular abdominal pain, fever or patient is systemically unwell
- General medical history/social support
- Patient age, medication and co-morbidities
- Any underlying medical condition that predisposes the patient to infectious diarrhoea, e.g. immunosuppressive medications, AIDS, gastrectomy
- Pregnancy (risk of dehydration or if still unwell at the time of delivery risk of infection of the baby)

Examination

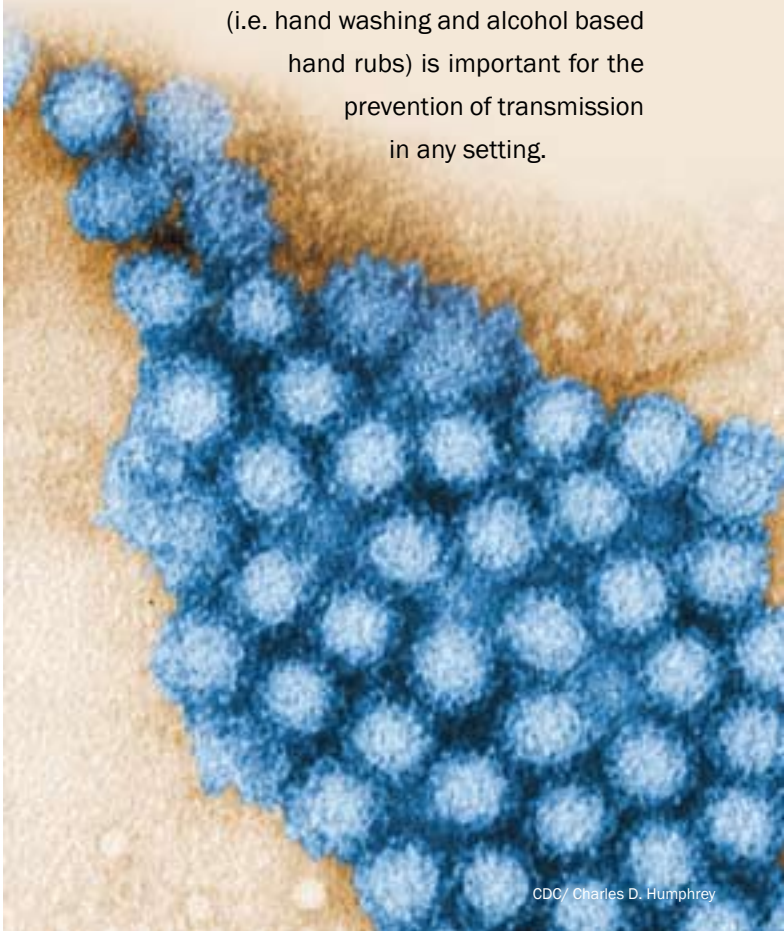
The aim of clinical examination is to further clarify the degree of dehydration and to exclude other causes.

Examination includes an assessment of the patient's:

- General appearance (looking unwell, eyes sunken, anterior fontanelle sunken in an infant)
- Alertness (irritability and restlessness in a child or lethargy)
- Temperature
- Pulse, BP (including a check for postural hypotension)
- Respiratory rate and character (especially in children)
- Skin turgor, state of mucous membranes and presence/absence of tears
- Capillary refill
- Abdomen

Norovirus is increasingly being implicated in cases of acute gastroenteritis[3]

Norovirus, and closely related Sapovirus, are increasingly being found as the cause of many cases of acute gastroenteritis. They are thought to cause 50% of food borne outbreaks. Outbreaks commonly occur in long term care facilities, cruise ships and hospitals as well as after social functions. In New Zealand 34 norovirus outbreaks were reported (961 cases) between April and June 2009, as well as 20 outbreaks of gastroenteritis (320 cases). Norovirus is highly contagious and as few as ten viral particles may be sufficient to infect an individual. The incubation period is usually 24 to 48 hours, (range 18 to 72 hours) and cases are considered infectious for 48 hours after the resolution of symptoms. Transmission is by contact with infected patients or their environment, via droplet contamination and airborne spread. Therefore hand hygiene (i.e. hand washing and alcohol based hand rubs) is important for the prevention of transmission in any setting.



CDC/ Charles D. Humphrey

Dehydration

In the majority of adults the most useful clinical signs include dry mucous membranes, the absence of tears, low urine output and hypotension. An accurate assessment of dehydration can be difficult, particularly in children and elderly people.

In children the most useful clinical signs for identifying dehydration are an unwell appearance, prolonged capillary refill time (of more than two seconds) abnormal skin turgor, absence of tears, low urine output and an abnormal respiratory pattern (initially rapid breathing then deep, rapid breathing).[5,6]

N.B. Hypernatraemic dehydration may be a complication of infectious gastroenteritis in infants aged under one year. This can occur if the infant has been given an inappropriately concentrated formula or rehydration solution. If a child seems more unwell than would be expected from the history, consider hypernatraemic dehydration. The infant may not appear to be dehydrated but the key clinical finding is a doughy feel to the skin. Specialist advice about rehydration is recommended.[6]

In elderly people, clinical signs of dehydration may be unreliable. The eyes may appear sunken because of reduced periorbital fat, changes in collagen and elastin may make skin turgor an unreliable sign and the tongue may often be dry because of mouth breathing.[7]

Laboratory investigation of infectious gastroenteritis

Urea and electrolytes

Investigation of urea and electrolytes is not routinely recommended in the assessment of patients with infectious gastroenteritis. One exception may be the assessment of dehydration in frail elderly people.

Faecal testing

A laboratory diagnosis may be useful for people who:

- Have persistent diarrhoea (no improvement after several days)
- Have bloody diarrhoea
- Have recently travelled overseas/ immigrant
- Are food handlers
- Are aged less than five years or greater than 70 years
- Attend childcare
- Live in or have recently visited rural areas
- Have eaten raw seafood
- Are immunocompromised
- Have received antibiotics / chemotherapy
- Have been recently hospitalised

See Best Tests “Laboratory Investigation of Infectious Diarrhoea” January 2008 for more detail on appropriate testing.

The key messages about faecal testing are:

- If laboratory testing is indicated, a single stool specimen for faecal culture is usually appropriate
- Tests for Giardia and Cryptosporidium are done on a single sample and should only be requested if there are risk factors such as recent overseas travel, tramping trips or drinking from rivers and springs
- Testing for “ova and parasites” is rarely indicated initially except for people who have recently travelled overseas

Management of infectious gastroenteritis

Management of a person with infectious gastroenteritis will depend upon the clinical condition of the affected person and in some circumstances the risk to public health e.g. diarrhoea in a person who is a food handler or childcare worker. It is important that food handlers are excluded from work until they have been asymptomatic for at least 48 hours, to prevent transmission of infection.

Most people who seek medical care require no medical intervention other than advice on appropriate oral rehydration. In children and elderly people the threshold for hospital admission should be lower because of the higher risk of dehydration. In elderly people other factors such as co-morbidities, general frailty or social circumstances may not allow management at home.[7]

Aim to prevent dehydration

Dehydration can be prevented in most people who have infectious gastroenteritis by increasing their intake of usual fluids. The aim is to replace lost water and electrolytes.

If dehydration occurs oral rehydration is the treatment of choice for both children and adults.

Children who are not dehydrated

Children with diarrhoea who are not dehydrated should continue to be offered normal food and fluids as tolerated. Fatty and sugary foods should be avoided as these may cause nausea and osmotic diarrhoea.[7] Children who are not dehydrated will usually refuse to drink an oral rehydration solution.[8]

To prevent dehydration sufficient fluid must be provided both for normal maintenance and to replace that lost from diarrhoea. A general guide for replacement of these lost

What fluid to use for oral rehydration?

A simple recipe for a homemade oral rehydration solution from WHO is:[9]

1 L of clean drinking water or cooled boiled water
8 tsp sugar
1 tsp salt

Stir until the salt and sugar dissolves. Store in the fridge.

Oral rehydration solutions such as Pedialyte solution for children or Enerlyte powder for adults (available on PSO), can be used. Chilling the oral rehydration solution (or freezing into ice blocks) can improve palatability. Pedialyte is available in bubblegum or fruit flavours.

Carbonated drinks, undiluted juices, tea, coffee and sports drinks are not suitable because of their high stimulant or sugar content. High sugar content is likely to cause osmotic diarrhoea. Fruit juice or lemonade must be diluted by one part to five parts water.[6]

Travellers Diarrhoea

Travellers diarrhoea is diarrhoea that starts during or soon after overseas travel. There are a wide range of causative organisms and specific pathogens are identified in about 50% of cases only.[7] Risk factors for travellers diarrhoea include visiting countries with poor water and food handling practices, summer travel, camping and eating from street stalls.

For most people with travellers diarrhoea, symptoms resolve within three to four days however it frequently causes disruption to planned holiday or business activities.[14] There are increased risks of complications for children, elderly people, those who are immunocompromised and people with co-morbidities.

Information should be given to travellers on self management options to minimise dehydration and disruption to activities. This should include advice on:

- Fluid replacement including safe sources of fluids and homemade rehydration solutions
- Use of loperamide to manage symptoms
- When to seek medical advice. Medical advice should be sought for young children and elderly people, if hydration is unable to be maintained, if symptoms persist (vomiting lasting more than 24 hours, diarrhoea lasting more than three days), if there is bloody diarrhoea or fever, or if cholera is suspected (profuse "rice-water" stools)
- Antibiotics – the use of empiric antibiotics should be discussed with the traveller. Evidence shows that ciprofloxacin will usually shorten the course of the traveller's diarrhoea within 20–36 hours.[7,14] Clinicians usually recommend prompt self treatment in moderate to severe cases. A single dose of 750 mg or 500 mg twice daily for three days is recommended. Some parts of Asia have quinolone resistant Campylobacter.

Prophylactic antibiotics are not recommended for the prevention of travellers diarrhoea unless the person is at high risk of severe illness or when watery diarrhoea would be difficult to manage (e.g. patient with a stoma).[7,14]

There is no single vaccine that will prevent travellers' diarrhoea because of the wide range of potential pathogens. Specific vaccines are available for rotavirus, hepatitis A, typhoid and cholera. The vaccine Dukoral provides protection against cholera and about 50% of the strains of enterotoxigenic *E. coli*.[14]

Travellers who have ongoing symptoms after returning home should be assessed in the normal way, but there should be a lower threshold for requesting a faecal specimen or for prescribing an empiric antibiotic, if not already used.[7]

fluids in children is to give, after each loose stool:[7]

- 50–100 mL of fluid in children aged under two years
- 100–200 mL of fluid in children aged from two to ten years
- As much fluid as tolerated, but at least 200 mL in children aged over ten years

Children who are dehydrated

If the child has both vomiting and diarrhoea, rehydration is more difficult and dehydration is more likely to occur. Fluids should be offered frequently in small volumes. Suggested rates are 1 mL/kg every five minutes, or 5 mL per minute given with a teaspoon or syringe.[6] If vomiting occurs, wait five to ten minutes before offering fluids again and continue to offer small amounts.

The aim is to rehydrate within four hours. To be effective, oral rehydration therapy does require intensive input from the child's parents or caregiver. Clinical reassessment may be required if symptoms persist or attempts at oral rehydration fail.

Rehydration in adults

Adults with infectious gastroenteritis should be advised to increase their fluid intake to at least 2 L a day and in addition to have 200 mL of fluid for every loose stool. Small volumes taken frequently are appropriate if the patient is vomiting.

Most adults should be advised to continue their normal diet but to avoid fatty and sugary foods.

The role of antidiarrhoeal drugs

In adults, loperamide can be useful for symptomatic control of mild to moderate diarrhoea. It is not recommended for use in children or in people who have bloody diarrhoea. The use of antidiarrhoeal drugs such as loperamide has been linked to prolonged illness in

The use of ondansetron in children

The use of antiemetics in children with gastroenteritis is usually discouraged. However there is evidence that single dose treatment with ondansetron may be useful in children with gastroenteritis and dehydration, who have not tolerated oral rehydration and who may otherwise require referral to hospital.

Strawberry flavoured wafers are available that dissolve within seconds in the mouth. Beneficial results include a reduction in vomiting, increased oral intake, few adverse effects and ultimately less need for IV rehydration.[10] Adverse effects include headache, dizziness and constipation, although in a small number of cases of children with gastroenteritis, an increase in diarrhoea may occur.[10]

Treatment with single dose ondansetron may be an option when attempts at oral rehydration have failed, the child is aged over six months and the parents have been informed of the risk of adverse effects and the cost.

Ondansetron is not subsidised in New Zealand for this indication. Some GPs have tablets available in their surgery for purchase when required (estimated cost $4 for 4 mg, $5 for 8 mg). The dose is calculated based on weight (0.15 mg/kg) or body surface area.[11] Approximate doses in children aged over six months are 4 mg for children up to 30 kg and 8 mg for children over 30 kg.

Table 2: Antibiotics in infectious gastroenteritis[4,7,12,13]

Causative agent	Cases when antibiotics are indicated	Antibiotic treatment
Campylobacter	Most patients recover with symptomatic treatment only. Antibiotics have little impact on duration and severity of symptoms but eradicate stool carriage. Antibiotic treatment is indicated if symptoms are severe or prolonged. Treatment may also be reasonable in food handlers, childcare workers and those caring for immunocompromised patients. For pregnant women nearing term, Campylobacter gastroenteritis should be treated with erythromycin to prevent exposure of the neonate to Campylobacter during vaginal delivery.	**First choice** Erythromycin 250 mg – 500 mg (child 10 mg/kg) three times daily for five days **Alternative** Norfloxacin 400 mg twice daily for five days is an alternative although resistance is likely if the infection was acquired overseas
Salmonella	Routine treatment with antibiotics is usually unnecessary and may prolong excretion. Treat in severe disease or immunocompromised patients.	**First choice** Norfloxacin 400 mg orally twice daily for three to five days **Alternative** Co-trimoxazole (400 + 80 mg tablets) two tablets twice daily for three to five days
Giardia	Antibiotic treatment is recommended for symptomatic people and those who have tested positive for the organism, to contain the spread.	**First choice** Ornidazole 1.5 g orally once daily for one to two days **Or** Metronidazole 2 g (child 30 mg/kg) orally once daily for three days
Shigella	Antibiotics are not usually indicated for mild cases. Treat if symptoms are severe. Use ciprofloxacin in immunocompromised patients.	**First choice** Co-trimoxazole (400 + 80 mg tablets) two tablets twice daily for three to five days (if the organism is sensitive) **Alternative** Norfloxacin 400 mg orally twice daily for three to five days **or** Ciprofloxacin 500 mg twice daily for three to five days
Yersinia	Antibiotics are not usually required. Treat if symptoms are severe.	**First choice** Doxycycline 200 mg stat then 100 mg daily for five days **Alternative** Co-trimoxazole (400 + 80 mg tablets) two tablets twice daily for three to five days or Ciprofloxacin 500 mg twice daily for three to five days

patients with shigellosis, toxic megacolon in patients with *C. difficile* and haemolytic uraemic syndrome in children with toxin producing *E. coli*. [4]

The role of antiemetics

Antiemetics are not usually recommended for use in infectious gastroenteritis because the risk of adverse effects may outweigh the benefits. In adults with severe vomiting, a single dose of an antiemetic (IM or buccally) may give symptomatic relief and allow successful oral rehydration.[7]

The role of antibiotics

In the majority of cases, empirical use of antibiotics is not indicated as most illness is self limiting. Antibiotics are not useful for any cases of infectious gastroenteritis caused by E. coli or Cryptosporidium. Cases where antibiotics may be used are outlined in Table 2.

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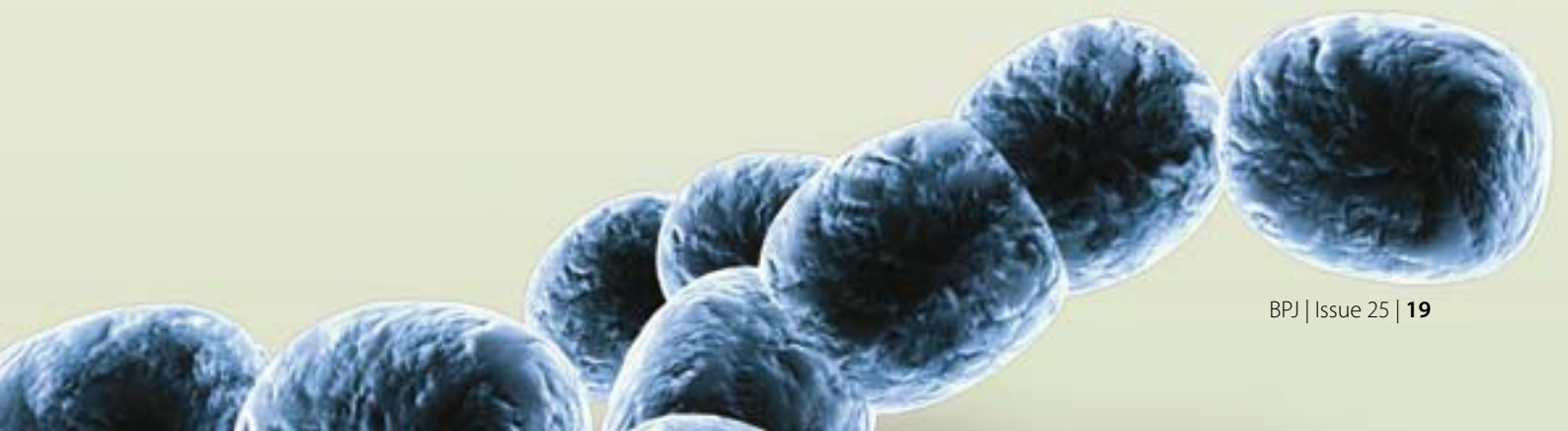

Generalised anxiety disorder in adults – diagnosis and management

Key concepts:

- Anxiety disorders are the most frequently seen mental disorders in primary care
- Generalised anxiety disorder (GAD) is one of the most common anxiety disorders
- Up to half of people with major depression also meet the criteria for GAD
- Psychological and drug therapies are equally effective in the treatment of GAD but the relapse rate for psychological therapies may be lower
- A wide range of behavioural and problem solving psychological approaches can be effective for patients with anxiety disorders. Cognitive behavioural therapy (CBT) is the most widely used psychological therapy and may be useful for some patients with GAD
- SSRIs are the first line option for drug treatment of GAD

Anxiety disorders are common

Anxiety is a normal human emotion. It becomes a disorder when it is of greater intensity or duration than would be normally expected and if it leads to impairment or disability. Anxiety may range from mild and transient, with no effect on daily function, to severe and persistent with significant impact on function and quality of life.[1]

Anxiety disorders are the most frequently seen mental disorders in primary care, followed by depression. In a New Zealand General Practice study, the annual prevalence of mental disorder was 21% for any anxiety disorder and 18% for any depressive disorder.[2]

Anxiety disorders are usually more common in women,[3] however individual disorders differ in their gender distribution, e.g. obsessive compulsive disorder is almost as common in men as women.[1] Older adults are less likely to be affected by anxiety disorders because they often can adapt more quickly to cope with stressful tasks.[4]

People with anxiety disorders are often frequent users of medical services and are at increased risk of developing substance dependence and attempting suicide.[3, 5]

Which anxiety disorder is most likely?

There are a wide range of anxiety disorders (see page 26) and presentation can vary. Some people present concerned about anxiety or stress, while others may present with addiction or social problems. Symptoms can be vague and may include sleeplessness, headache, dizziness, gastrointestinal disturbance or other somatic symptoms.[6]

Conditions that cause similar symptoms to anxiety should be considered. This includes hyper- and hypothyroidism, angina, asthma, depression and substance misuse e.g. caffeine, amphetamines, cannabis, cocaine. Some medications also cause symptoms of anxiety e.g. anticholinergics and toxicity from digoxin.[6, 7]

If anxiety is suspected then discussion around the following points may be helpful:

- The start of the anxiety symptoms (many patients delay seeking treatment for years)
- Associations with life events or trauma
- The nature of the anxiety (e.g. worry, avoidance or obsession)
- The impact of anxiety on daily function
- Medication use
- Alcohol, caffeine and cannabis intake

An algorithm can be used to determine which anxiety disorder is most likely (Figure 1).

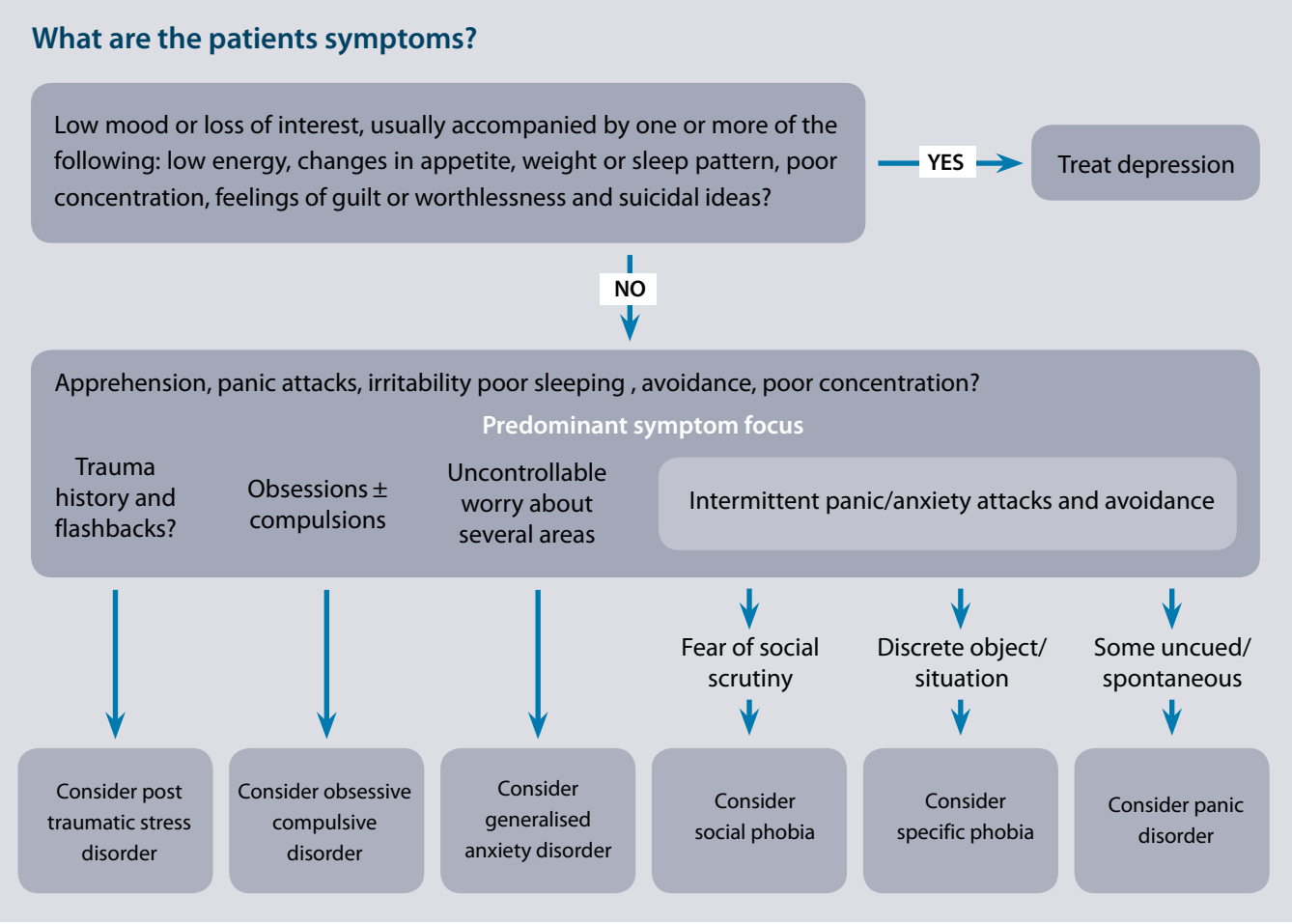

Figure 1: Exploration of suspected anxiety disorder [1,8]

Generalised anxiety disorder is one of the most common anxiety disorders

Generalised anxiety disorder (GAD) is one of the most common anxiety disorders seen in primary care.[7] It is characterised by excessive and inappropriate worrying that causes significant distress or impairment. Recovery from GAD can be less likely than recovery from major depression.[1]

Diagnosis of generalised anxiety disorder

The DSM-IV diagnostic criteria are used for a formal diagnosis of GAD (see sidebar). The Generalised Anxiety Disorder Scale (GAD7, Figure 2) can be used to assess severity.

Anxiety and depression often coexist

Approximately 35 to 50% of people with major depression also meet the criteria for GAD.[9] When there is a diagnosis of both depression and anxiety, or if depression follows an anxiety disorder, this usually indicates a more severe anxiety disorder with a poorer prognosis.[1] If anxiety symptoms arise as a consequence of depression, effective treatment of the depression will often relieve the anxiety symptoms.[1]

Suicide risk

Anxiety disorders are associated with a significantly increased risk of suicidal behaviour. Rates of suicide and suicide attempts are reported as being ten times higher in people with anxiety disorders, than in the general population. Co-existing mental disorders further increase this risk.[6]

Treating generalised anxiety disorder

Treatment is indicated for most people with GAD. Less intensive interventions are required for those with fewer or less severe symptoms.

The decision whether to treat may be based on:[1]

- Severity and persistence of symptoms
- Level of disability and impact on social functioning
- Co-existing mental or physical disorders
- Current medications

Which treatment?

Treatment of GAD may involve psychological therapy, drug therapy or a combination of both. Psychological and drug therapies are equally effective in the treatment of GAD. However the relapse rate for psychological therapies may be lower.[10] It is recommended that initially, either psychological or drug therapy are used alone as there is no evidence that using them together is more effective.[10]

Several factors determine which treatment is chosen:[5, 6, 10]

- Patient's preference and motivation
- Patient's response to any previous treatments
- Availability and cost of psychological therapy
- Patient's ability to engage in treatment (e.g. certain cognitive-behavioural therapies may be unsuitable for patients with significant cognitive impairment)
- Adverse drug effects
- Onset of efficacy

Psychological therapies for generalised anxiety disorder

A wide range of behavioural and problem solving psychological approaches can be effective for patients with anxiety disorders.[11] Cognitive behavioural therapy (CBT) is the most widely used and may be useful for some patients with GAD.[6, 7, 10]

DSM-IV diagnostic criteria for GAD

1. Excessive anxiety and worry about a number of events or activities, occurring more days than not for at least six months, that are out of proportion to the likelihood or impact of feared events.
2. The worry is pervasive and difficult to control
3. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past six months):
   - Restlessness or feeling keyed up or on edge
   - Being easily fatigued
   - Difficulty concentrating or mind going blank
   - Irritability
   - Muscle tension
   - Sleep disturbance (difficulty falling or staying asleep or restless unsatisfying sleep)
4. The anxiety, worry or physical symptoms cause clinically significant distress or impairment in social, occupational or other important areas of functioning.

Figure 2: Generalised Anxiety Disorder Scale (GAD-7)

Generalised Anxiety Disorder Scale (GAD-7)				
Over the last two weeks, how often have you been bothered by the following problems?				
	Not at all	Several days	More than half the days	Nearly everyday
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Having trouble relaxing	0	1	2	3
5. Being so restless it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Score

5–9	Mild anxiety
10–14	Moderate anxiety
15–21	Severe anxiety

Internet based self-directed cognitive behavioural therapy

Self-directed cognitive behavioural therapy programmes have been shown to be effective.[12] Programmes such as MoodGYM and E-couch are available online and contain modules, anxiety and depression assessments and interactive games and other activities, aiming to teach people cognitive behavioural techniques.

MoodGYM is directed at people with depression and anxiety:
www.moodgym.anu.edu.au/welcome

E-couch specifically addresses anxiety disorders:
http://ecouch.anu.edu.au/welcome

Drug therapies for generalised anxiety disorder

For drug doses see Table 1.

Selective serotonin reuptake inhibitors (SSRIs)

First line drug treatment of GAD is an SSRI as they are generally well tolerated and can be used long term without the risk of tolerance or abuse.[1, 7] As there is likely to be a class effect of SSRIs in treating anxiety disorders, the choice of a particular SSRI can be based on potential adverse effects, interactions and patient preference.[9] SSRIs are also effective in treating depression that can commonly co-exist with anxiety.

Treat for 12 weeks before assessing efficacy. Treatment may need to continue for 6–12 months after symptoms of anxiety have resolved.[1]

Adverse effects of SSRIs. Transient increases in anxiety, insomnia and nausea may be associated with SSRIs and can affect patient compliance. These adverse effects may be minimised by starting with low doses and slowly increasing to full doses as tolerated.[5] If the transient increase in anxiety is intolerable some clinicians may consider prescribing a benzodiazepine for the first few weeks of treatment. It is important to make clear to the patient that the benzodiazepine is short term therapy only.[9]

SSRIs can cause sexual dysfunction which may persist as treatment continues and is a common reason for treatment discontinuation.[9] Patients taking higher than typical maintenance doses may benefit from a dose reduction. A trial of a phosphodiesterase inhibitor such as sildenafil may be helpful for some men experiencing sexual dysfunction with SSRI use.[13]

Discontinuation symptoms such as dizziness, nausea, anxiety, vivid dreams and headache may occur on stopping an SSRI. Paroxetine is associated with a higher incidence of discontinuation symptoms because it has a short half life. Fluoxetine has a lower incidence due to its longer half life. Gradual withdrawal over several weeks is recommended.[7]

Benzodiazepines

Benzodiazepines have been widely used for the management of GAD because they have a rapid onset of action and are effective for managing symptoms short term. However, the value of benzodiazepines in long-term treatment is less clear. There is some evidence that the outcome in relation to anxiety symptoms with long term use of benzodiazepines (e.g. after four to six weeks of treatment) may not be significantly different from placebo.[6] In addition, their main therapeutic effect is to minimise the somatic symptoms of anxiety, with less effect on the key psychological aspects.[5]

Benzodiazepines may be trialled in the treatment of GAD when other drugs or CBT have been ineffective.[4] They may also be used for a few weeks during the initiation of antidepressants when anxiety symptoms may increase, before the onset of efficacy.[5] Benzodiazepines are not effective at treating depression that often co-exists with GAD.[7]

Adverse effects of benzodiazepines. Sedation is a common adverse effect with benzodiazepine use. There

is also potential for cognitive impairment and ataxia in elderly people. These effects are more likely to occur with longer acting agents such as diazepam.[7] Use of short- to intermediate-acting benzodiazepines such as alprazolam, lorazepam and oxazepam avoids accumulation and resulting daytime sedation and confusion.[7]

There is a low risk of abuse when benzodiazepines are used in people without a history of dependency. However it is best to avoid using these drugs in people who have previously demonstrated addictive behaviour.[7] People with chronic pain disorders and severe personality disorders may also be at increased risk of dependency.[9]

When discontinuing benzodiazepines, the dose should be slowly tapered to avoid rebound anxiety and withdrawal symptoms. Other withdrawal options prior to tapering include switching from a shorter-acting to a longer-acting benzodiazepine or treating the patient with an antidepressant.[9]

Buspirone

Buspirone is funded on special authority for use as an anxiolytic when other agents are contraindicated or have failed. It is considered second line, after antidepressants, because it has no impact on co-existing depression.[7] Buspirone is as effective as benzodiazepines in the treatment of GAD,[5] but may be less effective when used in people who have recently been taking benzodiazepines.[14]

The advantages of using buspirone rather than a benzodiazepine include lack of withdrawal symptoms and low potential for abuse or physical dependence. It also does not increase the effects of alcohol or sedative hypnotics.[9]

Table 1: Drug doses for the treatment of generalised anxiety disorder[7, 9]

Drug	Starting dose	Usual dose
Selective serotonin reuptake inhibitors (SSRIs)		
Citalopram	10–20 mg daily	20–60 mg daily
Fluoxetine	10–20 mg daily	20–60 mg daily
Paroxetine	10–20 mg daily	20–60 mg daily
Tricyclic antidepressants (TCAs)		
Imipramine	25–50 mg daily	100–300 mg daily
Clomipramine	25 mg daily	100–250 mg daily
Benzodiazepines		
Alprazolam	0.25–0.5 mg, 3 times daily	0.5–4 mg daily
Lorazepam	0.5–1 mg, 3 times daily	0.5–2 mg, 3 times daily
Oxazepam	10 mg, 3 times daily	10–30 mg, 3–4 times daily
Diazepam	2 mg, 2–4 times daily	2–5 mg, 2–4 times daily
Other agents		
Buspirone	5 mg, 3 times daily	20–30 mg daily, given in 2–3 divided doses (max 60 mg)

Types of anxiety disorders[1, 5]

There are a wide range of anxiety disorders in addition to GAD and people can be affected by more than one.[6] The majority of these disorders have an annual prevalence of approximately 3% in a New Zealand general practice setting.[2]

Panic disorder

Panic attacks are unexpected discrete periods of intense fear or discomfort. Typically panic attacks reach their peak within ten minutes and last 30–45 minutes. Often patients may feel that they are experiencing a serious medical condition such as a myocardial infarction. Panic disorder is characterised by recurrent panic attacks.

Agoraphobia

About two-thirds of people with panic disorder develop agoraphobia. This is a fear of being in places or situations from which escape might be difficult should a panic attack occur, including being in a crowd, being outside the home or using public transport.

Social phobia (social anxiety disorder)

Social phobia is characterised by marked, persistent and unreasonable fear of being observed or evaluated negatively by other people in social or performance situations e.g. speaking to unfamiliar people, eating in public.

Specific phobia

Specific phobia is characterised by excessive or unreasonable fear of objects (e.g. spiders, snakes) or situations (e.g. flying, heights, seeing blood). This type of anxiety is significantly more common in women than men.[1]

Post-traumatic stress disorder (PTSD)

Post-traumatic stress disorder develops after exposure to an event causing psychological trauma e.g. actual or threatened serious injury to self or others. The condition is characterised by recurrent and distressing recollections of the event, nightmares and/or a sense of reliving the experience with illusions or hallucinations. People often make efforts to avoid activities or thoughts associated with the trauma. Hyper-arousal symptoms such as disturbed sleep, hypervigilance and an exaggerated startle response are also associated with PTSD.

Obsessive-compulsive disorder (OCD)

Obsessive-compulsive disorder is characterised by recurrent obsessions and/or compulsions that cause impairment in terms of distress, time or interference with functioning. Common obsessions relate to contamination, accidents and sexual or religious preoccupations. Common compulsions include washing, checking, cleaning, counting and touching.

Tricyclic antidepressants

The tricyclic antidepressants imipramine and clomipramine have been found to be effective in GAD. They are however considered second line agents as they are less well tolerated and are more toxic in overdose than SSRIs.[7]

Beta-blockers

Propranolol is not recommended for the treatment of GAD. It is no more effective than placebo.[6]

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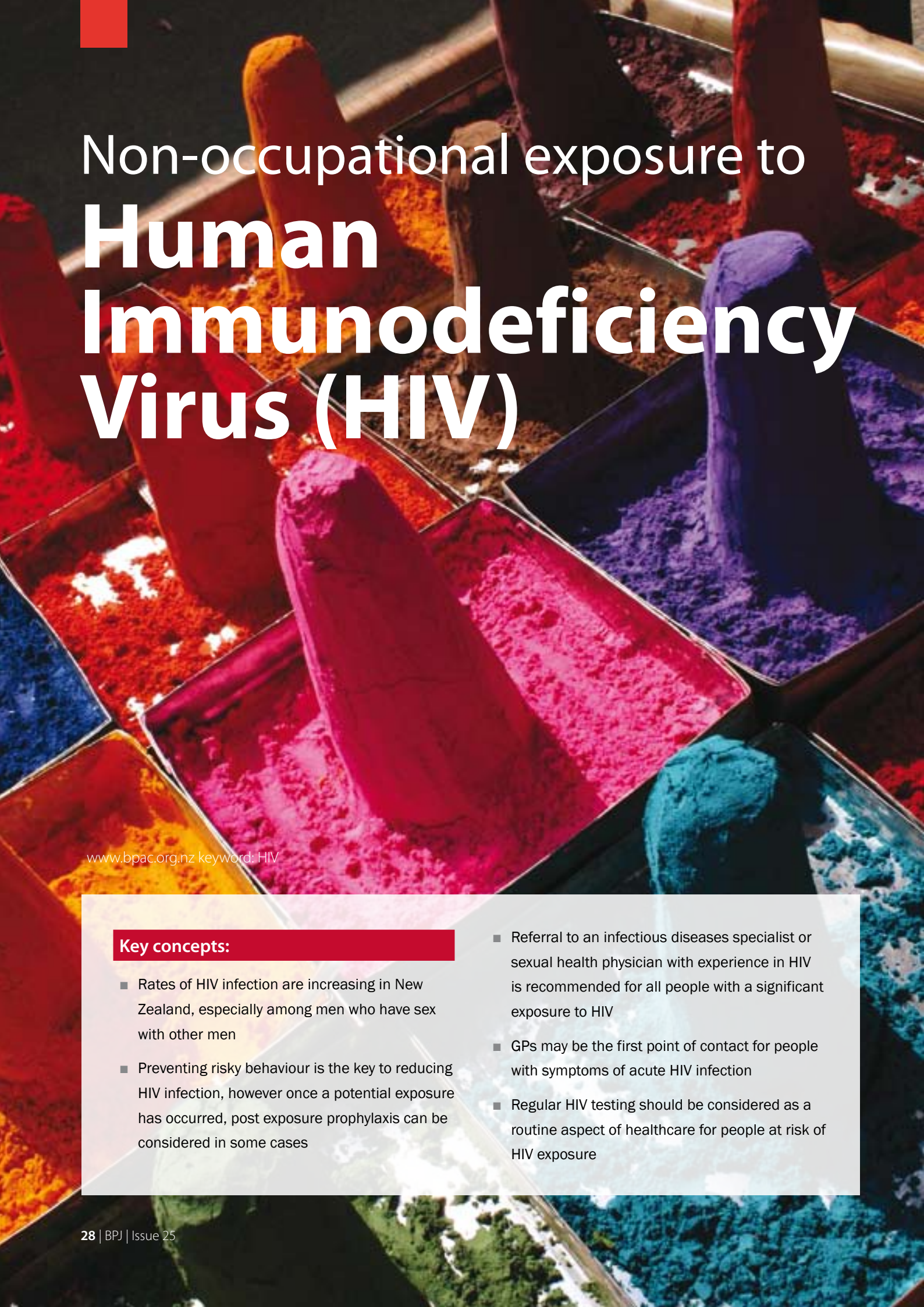

Non-occupational exposure to Human Immunodeficiency Virus (HIV)

www.bpac.org.nz keyword: HIV

Key concepts:

- Rates of HIV infection are increasing in New Zealand, especially among men who have sex with other men
- Preventing risky behaviour is the key to reducing HIV infection, however once a potential exposure has occurred, post exposure prophylaxis can be considered in some cases
- Referral to an infectious diseases specialist or sexual health physician with experience in HIV is recommended for all people with a significant exposure to HIV
- GPs may be the first point of contact for people with symptoms of acute HIV infection
- Regular HIV testing should be considered as a routine aspect of healthcare for people at risk of HIV exposure

New cases of HIV are increasing in New Zealand

In 2008 more people were diagnosed with HIV than in any other year since surveillance records began in the 1980s. This reflects a pattern of increasing numbers of notified cases since 2000. During 2008 a total of 184 people were newly diagnosed by antibody testing. A further 43 people, most of whom had previously had their HIV infection diagnosed overseas, were identified as the result of having their first viral load testing in New Zealand.

Half of the cases were men infected by having sex with other men (MSM), a third were men or women infected through heterosexual contact and the remaining cases were through injecting drug use, blood transfusion (overseas), mother to child transmission or unknown risk behaviours.[1]

HIV infection is most commonly diagnosed in European men aged 30–49 years. Among MSM with HIV, Māori and Pacific men are represented at around the same rate as in the general population.[1] However it has been suggested that Māori and Pacific men may get tested later than European men.

HIV infection by heterosexual transmission is often acquired overseas. Women from "Other" ethnicities have a proportionally higher rate of diagnosis than any other ethnicity, followed by men from "Other" ethnicities. Rates of infection among Māori, Pacific and Asian people were proportionally higher (even more so for women) compared to European people.[1]

A similar pattern is emerging in 2009. So far (January to June) 78 people have been diagnosed with HIV and a further 19 identified, after having their first viral load testing in New Zealand. Just under half of the total number were MSM.[2]

There is concern that the increasing infection figures reflects complacency about the continuing risk of becoming infected with HIV. Preventing risky behaviour is the key to reducing HIV infection. As well as educating individuals there is a need to try to reduce the likelihood of acquiring HIV once a potential exposure has occurred. One possible approach is to offer post exposure prophylaxis with the aim of reducing the risk of acquiring the infection and preventing further transmission to others.

Managing non-occupational exposure incidents

Scenario: A patient presents to general practice on Monday, after engaging in risky behaviour over the weekend that puts him/her at risk of HIV infection. What do you do?

Clinical assessment

First establish what happened

Take a detailed history of the incident e.g. what sexual activity took place, whether it was consensual, details of injecting drug use.

It is preferable to use medical terminology when discussing sexual practices and sexual health, however it is important that the patient understands the terminology used. Conversely, the clinician should ask for clarification of any colloquial terminology they are unfamiliar with. A non-judgemental attitude will help to ensure that any risky behaviours are fully disclosed.

See BPJ 20 (April 2009), Let's talk about sex.

If possible, find out any details that are known about the person who is the source of potential HIV exposure. If the patient does not know the source's HIV status and contact details are available, establish whether the patient or practice will attempt contact.

Check clinical history

- Has the patient had any previous HIV tests?
- Does the patient have any current or previous STIs?
- Check hepatitis B and hepatitis C status – recent tests or immunisation
- Consider taking a psychiatric, drug and alcohol history

Assess risk of HIV transmission

The risk of HIV transmission is determined by:[3]

- Method of exposure
- Risk that the source is HIV positive
- Co-factors associated with increased risk of transmission from the source to the exposed person

Method of exposure. The risk of HIV transmission with sexual contact is difficult to quantify as there are many additional factors that influence risk such as concurrent STIs or other genital conditions, cervical or anal dysplasia and circumcision status.[4] The highest risk behaviour is receptive anal intercourse without a condom with a person known to be HIV positive (Table 1). Oral intercourse poses the lowest risk but HIV may very rarely be transmitted by this method of exposure, particularly when there is a breach in oral mucosal integrity.[4]

Source status. If possible, the source should be contacted to establish their HIV status. If they do not know their status, request that they be tested.

If the source is unable to be contacted or they refuse to disclose their status, the risk that they are HIV positive is based on seroprevalence (Table 2).

The United Nations AIDS organisation has information on worldwide prevalence of HIV and AIDS.

www.unaids.org/en/KnowledgeCentre/HIVData/Epidemiology/latestEpiData.asp

Table 1: Risk of HIV transmission with non-occupational exposure (Adapted from ASHM[3])

Type of exposure with HIV+ source	Estimated risk of HIV transmission per encounter
Receptive anal intercourse without a condom	1/120
Use of contaminated drug injecting equipment	1/150
Insertive anal intercourse without a condom	1/1000
Insertive or receptive vaginal intercourse without a condom	1/1000
Fellatio/cunnilingus	Not measurable
Bites, other trauma	Not measurable

Table 2: Estimated seroprevalence of HIV in New Zealand

Community group	HIV prevalence (estimated)[5]
MSM in Auckland	5 – 10%
MSM in other cities	2 – 5%
Injecting drug users in New Zealand	0.3 –1%
Commercial female sex workers in New Zealand	0.1 – 1%
Immigrants from developing countries:	
Africa	5 – 40%
Southeast Asia	1 – 5%
Heterosexual men and women in New Zealand	<0.1%

Co-factors that increase risk of transmission[3]

- High viral plasma load in source – a person is most infectious when they first contract the virus and when they have AIDS related symptoms
- STI in either the source or exposed person, especially genital ulcer disease and symptomatic gonococcal infections
- Breach in genital mucosal integrity e.g. trauma or genital tract infection
- Breach in oral mucosal integrity (in relation to oral sex)
- Exposed male is uncircumcised (inner mucosa of foreskin is more susceptible to infection and tears)

Management and referral

The role of the GP is to establish whether there has been significant risk of exposure to HIV. If this is the case, the patient should be referred immediately to an infectious diseases or sexual health physician with HIV experience. HIV testing and follow-up care takes place within this setting.

Non-occupational post exposure prophylaxis

Antiretroviral drugs may be prescribed for people who have had a significant risk of HIV exposure, to reduce the possibility of acquiring the infection. Non-occupational post exposure prophylaxis (NPEP) ideally should be started within a few hours of the exposure and no more than 72 hours later, as it is very unlikely to be effective after this time.

The use of NPEP is still controversial as there is currently limited evidence that it reduces the transmission of HIV and concern that it may encourage risky behaviour. It is also very costly ($1000 – $1500 per month) and adherence may be an issue due to the length of treatment required (28 days) and potentially serious adverse effects of the drugs.[6]

NPEP is currently not funded in New Zealand. PHARMAC has assessed an application for this indication and it is currently being considered alongside other funding priorities. Post exposure prophylaxis is funded by special authority for occupational exposure (e.g. needle stick injuries) and in some cases of sexual assault (usually covered by ACC).

If NPEP is being considered, the patient should be referred urgently to an infectious diseases consultant. PHARMAC has published a list of named specialists that have been approved to prescribe antiretrovirals in New Zealand.

See the Pharmaceutical Schedule Update, 1 January 2009, Page 4. Also available online at www.pharmac.govt.nz/2008/12/19/SU.pdf

Indications for NPEP

NPEP may be considered if the source is known to be HIV positive or the source status is unknown, but they are from a high-risk population, which includes:[4]

- Men who have sex with other men
- Men who have sex with both men and women
- Injecting drug users
- People from a country where HIV is prevalent
- Commercial sex workers
- People who have a sexual partner belonging to any of these groups

And there has been:

- Receptive or insertive anal or vaginal intercourse
- Shared drug injecting equipment

A clinician considering prescribing NPEP would usually calculate the risk of infection, based on the type of exposure and the risk of infection in the source (see Tables 1 and 2). In general, NPEP is considered if the transmission risk is greater than 1 in 15000.[3]

Examples of risk calculation–

1. Receptive anal intercourse with MSM source of unknown HIV status in Auckland:

   Unprotected receptive anal intercourse (1/120) x MSM in Auckland (10%) = 1/1200

2. Sharing of drug injecting equipment with an HIV positive source:

   Use of contaminated injecting equipment (1/150) x HIV positive source (100%) = 1/150

3. Insertive vaginal intercourse with a sex worker of unknown HIV status:

   Insertive unprotected vaginal intercourse (1/1000) x female sex worker in New Zealand (1%) = 1/100000

Antiretrovirals

For NPEP, a two or three drug regimen is prescribed for a course of 28 days.

The commonly recommended drug regimen for NPEP is zidovudine + lamivudine (Combivir) plus either efavirenz (Stocrin) or lopinavir + ritonavir (Kaletra). Clinicians may select a different drug combination, depending on specific patient factors related to the treatment history of the source patient (if known), or the risk of adverse effects.[4]

HIV testing

If the patient is being referred immediately to specialist care, HIV testing will not be required by the GP. Otherwise, an HIV test (HIV antibody) should be requested immediately, and testing will need to be repeated regularly (see follow up below) as it can take up to six months for infection to be detected.[7]

Additional investigation

Assess pregnancy risk and consider the emergency contraceptive pill if required.

Test for Hepatitis B, Hepatitis C and STIs (chlamydia, gonorrhoea, syphilis, depending on exposure history).

Follow up

- HIV repeat testing at four to six weeks, three months and six months after exposure[4]
- Provide support when discussing HIV test results
- STI repeat testing at four to six weeks and three months as appropriate
- Hepatitis C repeat testing (if indicated) at four to six weeks, three months and six months after exposure[4]
- Offer Hepatitis B vaccination if infection has been ruled out.
- Discuss precautions e.g. use condoms, avoid sharing blood-contaminated fomites (razors, toothbrushes) until final negative test at six months[4]
- Reinforce safer sex messages

If the patient is receiving NPEP, they will require ongoing assessment for adverse effects as well as LFT, CBC and electrolyte monitoring. Responsibility for this should be established with the prescribing physician.

Identifying acute HIV infection

Scenario: A patient presents to general practice with persistent flu-like symptoms. After taking a history it is discovered that the patient has recently engaged in risky sexual behaviour. Is this cause for concern?

Symptoms of acute HIV infection

When an HIV infected person first has an immune response to the virus infected cells, cytokines are released by the body's immune system, causing flu-like symptoms.[8] This is known as acute or primary HIV infection or seroconversion illness.[7] It usually occurs four to six weeks after initial infection. It is estimated that around 30 to 60% of people infected with HIV have these signs and symptoms.[7,8]

The symptoms of acute HIV infection are non-specific and can be easily missed, but history of risky behaviour is the key to diagnosis. Although there is some doubt that early treatment of HIV is beneficial, early diagnosis provides an opportunity to decrease the risk of transmission to other people. A person with HIV is very infectious during

this period. This may also be the only occasion when an HIV infected person visits their doctor, before advanced immunosuppression occurs many years later.[7]

Clinical assessment

Suspicion may be raised if a patient presents with flu-like symptoms (Table 3) out of flu season and the fever has lasted longer than three days.

Taking clinical judgement into consideration, patients presenting with flu-like symptoms should be asked about their history of risky sexual behaviour or injecting drug use.[8]

Table 3: Key signs and symptoms of acute HIV infection (adapted from Anderson, 2003[8])

General	Fever for three or more days (90% cases)
	Lethargy and malaise
	Myalgia and arthralagia
	Lymphadenopathy (40 – 70% cases)
CNS	Headache (especially retro-orbital, worsening on lateral eye movements)
	Signs of meningism with stiff neck on passive flexion
	Photophobia
Skin	Rash (particularly maculopapular on thorax and arms)
	Desquamation reactions of the hands and feet
Gastrointestinal	Diarrhoea
	Mouth ulcers
	Sore throat (sometimes candidal)

Managing acute HIV infection

HIV testing

If an acute HIV infection is suspected based on patient history, HIV tests should be requested. HIV antibodies can be negative for up to six months after the start of the illness, so retesting may be required.[8] Some literature recommends that negative results are repeated in seven days,[7] however modern tests are rarely falsely negative.

Referral

Anyone with a positive HIV test should be referred to an infectious disease or sexual health physician with HIV experience.

Treating symptoms

The physical symptoms can be treated symptomatically e.g. with analgesics. Hospital admission may be required if symptoms are severe or if rehydration is required, however most patients can be managed at home. Symptoms usually resolve spontaneously within two to three weeks.[7]

Psychological support is imperative. The patient may be referred to counselling or a peer support group. The New Zealand AIDS Foundation offers a network of patient support (see contact details at end of article).

HIV testing for at-risk people

Scenario: A patient who may be at risk of exposure to HIV presents to general practice for a routine visit. Should they be offered an HIV test?

There continues to be a stigma associated with HIV testing and many people are reluctant to get checked out. As the number of HIV cases has been increasing in New Zealand over the past ten years, it is important that people at risk are regularly tested and safer behaviours are discussed. HIV testing should be normalised and regarded as a standard aspect of healthcare for those for whom testing is relevant. Advances in treatments means that for many people, HIV can now be regarded as a long-term illness rather than the death sentence that it once was.

Who should be tested?

HIV testing should be offered and recommended to the following people:[7, 9]

- Sexual partners of people known to be HIV positive
- Men who have disclosed sexual activity with other men
- Female sexual contacts of men who have sex with other men
- Any other person who has a history of unprotected sexual exposure that could result in HIV transmission
- People from a country where there is a high prevalence of HIV
- All people who report sexual contact overseas or have sexual contact with a person from an area of high prevalence
- People seeking assessment for a STI
- Prospective partners in a new sexual relationship
- People with a history of injecting drug use that involves the sharing of needles, syringes, spoons, filters etc

These people should be tested annually or more often if they have a high frequency of risky behaviour.[7]

N.B. In addition to the scenarios based on risk behaviours above, HIV testing is also recommended for all pregnant women and all people recently diagnosed with tuberculosis (can be associated with HIV and AIDS).[9]

How should testing be approached?

Pre-test discussion

Testing should be voluntary and only undertaken with the patient's knowledge, consent and understanding.[9]

Make sure the patient understands why they are at risk of HIV and why it is recommended they get tested. If a patient refuses to be tested, explore the reasons for this choice and ensure that it is not due to incorrect beliefs about the virus or consequences of testing.[7]

Discuss and agree upon how the results will be given. Face-to-face provision of results is strongly encouraged. However recent practice at a number of sexual health clinics has been to discuss giving results by phone at the initial interview, with the proviso that should any results be of concern the patient will agree to come in the same day for face-to-face discussion.

Ensure that language and cultural barriers are addressed and that the patient understands what a positive or negative result will mean i.e. positive does not mean good news.[7]

If partners are tested together discuss whether they will disclose the results to each other and how the results will be acted upon.

Post-test discussion

If the result is positive, the patient should be referred to an infectious diseases physician or sexual health physician with HIV experience at the earliest possible time, preferably within 48 hours.[7]

Have an established recall process if a patient fails to attend an appointment to receive results, particularly if positive.

A negative result may be used as an opportunity to reinforce safer sex messages.

Resources

Infectious Disease or Sexual Health physicians at local hospitals are the most appropriate source of information for GPs.

The New Zealand AIDS Foundation provides patient information and support through a network of nationwide services:

Phone 0800 80 AIDS (2437)

www.nzaf.org.nz

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www.bpac.org.nz keyword: cancer

Smoking related cancer MORBIDITY & MORTALITY

PERFORMANCE PROGRAMME

Smoking contributes to approximately one in three cancer deaths

Smoking is a significant risk factor for the following cancers:

- Lung
- Head and neck: lip, oral cavity, pharynx and larynx
- Upper GI tract: oesophagus, stomach and pancreas
- Renal tract: bladder and kidney

It is also a risk factor for cancer of the cervix and vulva, uterus and bowel and acute myeloid leukemia.[1]

Alcohol appears to potentiate the carcinogenic effect of tobacco, significantly increasing the risks of cancer of the head and neck, stomach, liver and pancreas.

Overall, cigarette smoking contributes to approximately one in three cancer deaths.

Any exposure to tobacco increases the risk of cancer

At an individual level, the risk of developing cancer is related to the life-time exposure to tobacco, the quantity smoked each day, the total number of years smoked and the age that smoking started.[2] Of all these factors, the length of time that someone smokes seems to be the most significant. For example in people who have smoked for 45 years the risk of lung cancer is 100 times greater than for individuals who have been smoking for 15 years even if the amount smoked each day is less.[3]

There is no safe level of tobacco exposure. There is measureable risk of cancer with low levels of smoking,[4,5] occasional smoking,[6] low tar cigarette smoking and passive smoking.[7, 8]

Stopping smoking reduces cancer risk

Stopping smoking reduces the risk of smoking-related cancers. This effect is most pronounced at younger ages but stopping smoking at any age confers benefit. People who stop smoking at age 30 years reduce their risk to almost that of non-smokers, those at age 50 years can halve the excess risk of cancer,[9] and mortality is even reduced in people who stop smoking in their seventies.[10]

The effect of stopping smoking varies depending on the cancer:[11]

- The risk of lung cancer halves in about ten years
- The risk of oral and laryngeal cancer takes at least 20 years after stopping to reduce to that of non-smoker
- The risk of bladder cancer takes at least 25 years after stopping to reduce to that of non-smoker

It remains controversial as to whether there is any real benefit from cutting down the number of cigarettes smoked each day.[12] However this may be a strategy for those unable to quit completely.[13]

Lung cancer

Nine out of ten lung cancers are directly related to smoking and the inhalation of second hand smoke is estimated to be responsible for one in four of the lung cancers found in non-smokers.[14]

Upper aerodigestive cancer

Smoking is associated with around nine in ten cancers of the lip, oral cavity, pharynx, larynx and oesophagus.[15] All types of tobacco exposure carry a risk of developing these cancers including chewing tobacco, using snuff, smoking cigars or smoking marijuana as well as the more obvious risk from cigarette smoking.

By the age of 75 a smoker has a one in 16 chance of developing these cancers compared to a one in 125 chance in a non-smoker.[16]

Stomach and Pancreatic cancer

Smoking contributes to over one in four pancreatic cancers[17] and one in five stomach cancers.[18]

Urinary tract cancers

Smoking increases the risk of bladder cancer by three to five times[19] and contributes to two out of three cases in men and one in three cases in women.

The risk of kidney cancer is doubled by smoking. It contributes to one in four cases in men, and one in ten cases in women.[20]

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The unequal impact of cancer

Cancer has a significant and disproportionate impact on Māori and there are considerable disparities in experiences, quality of health care and outcomes:

- Māori and Pacific Peoples experience greater incidence and significantly greater mortality from all cancers compared to others
- Inequalities in cancer death rates contribute to the significant gap in life expectancy between Māori and non-Māori
- There are disparities in access to cancer services

Māori are nearly twice as likely to die from cancer, even though they are only 18% more likely to have cancer. One reason for this is that Māori are more likely to be diagnosed with cancer at a more advanced stage.

Lung cancer is the leading cause of cancer deaths in New Zealand. The incidence of lung cancer in Māori is the highest in the world. Lung cancer mortality rates have increased in Māori but have decreased for other ethnic groups. The average age of death is also lower (63 years compared to 70 years).

New Zealand survival rates from lung cancer are one of the poorest in the developed world. Lung cancer is the leading cause of cancer deaths with a five year relative survival rate of 10.2%, considerably worse than Australia (12%) and the USA (15.6%). The five year relative survival rate for Māori is 7.7%.

Multiple factors contribute to the higher mortality rate in Māori including:

- Late presentation
- Delays in treatment
- Low surgical rates for early stage disease

Māori are four times less likely than Europeans to receive curative treatment. In many cases, treatment for Māori is aimed at relieving symptoms.

Focused interventions for Māori are needed to address these disparities.

See BPJ 18 (December 2008), “The unequal impact of cancer” for further information and references.

Early detection and referral of smoking related cancers

Since the majority of people with cancer will initially present to general practice, GPs have the greatest opportunity to make a difference with early detection and the initiation of speedy referral to specialist services. However, the difficulty is to achieve improved cancer detection without increasing unnecessary referrals, which may reduce access to services for people who need them.

"Lower threshold for referral equals more referral equals more delay to get a hospital appointment. I believe the key point is the quality of the referrals. Referring patients early may cause more patients with self limiting conditions to undergo investigations which do more harm than good to them and the health system. The best test we have in general practice is time BUT we must ensure timely follow up to identify those not resolving". – GP, Nelson

Detecting cancer

For people presenting with typical symptoms and signs of cancer, the diagnosis and decision for referral is straightforward. However the initial symptoms of some cancers can be difficult to distinguish from the symptoms of other more common disorders or may be vague and non-specific.[1]

General guidelines

In people presenting with atypical symptoms or signs, the presence of a risk factor may increase the suspicion of cancer. General risk factors that increase the suspicion of cancer include:

- Māori or Pacific ethnicity[2]
- Current or ex-smoker
- Known exposure to carcinogen e.g. asbestos
- Previous personal or family history of cancer
- Known pre-cancerous condition e.g. Barrett's oesophagus

If a person presents three or more times with the same symptom or group of symptoms, the GP needs to exclude cancer. Referral to a specialist must be considered.[3]

Combinations of signs and symptoms have a higher predictive value than a single symptom.[3]

If common symptoms do not resolve as expected, the initial diagnosis should be reviewed and cancer excluded.[4]

Avoiding delay

Early referral may improve prognosis for people with cancer

Any delay in the time taken from when the first symptom is noticed by the patient, to the start of treatment has potentially negative consequences on the prognosis of cancer.

Delays can occur at several stages and include:

- Failure of some patients to seek help quickly
- Difficulties GPs have in identifying patients with cancer[5]
- Administrative delays in secondary care with the referral process,[6] accessing investigations and planning

Patient delays

Māori and Pacific peoples,[7] older people and those from areas of low deprivation[8] are more likely to be diagnosed with cancer at a more advanced stage[9] and may by-pass general practice completely and present for the first time at the Emergency Department.[10] It is appropriate to have a higher degree of clinical suspicion in these groups and to examine possible barriers to accessing healthcare.

GP delays

Common reasons for GP delay in referring are insufficient examination, initial misdiagnosis of cancer as a benign self-limiting condition[11,12] and failure to organise definite follow up.[5]

Delays in investigation and referral

People with features typical of cancer need to be referred without delay. GPs should ensure referrals:

- Are made in a timely manner
- Provide relevant and sufficiently detailed information including patient contact details
- Are followed up promptly to ensure there has been no administrative errors in secondary care that may result in delay

Only consider investigations if this will not delay the referral process. In people with less typical symptoms and signs that might be due to cancer, order investigations urgently.

Making decisions about treatment

Once a possible diagnosis of cancer is made further investigations are required to confirm the diagnosis, stage the cancer and measure the performance status (general health) of the patient before treatment is commenced. Many of these investigations are not available in primary care, except privately, and are usually managed after referral to specialist services.

The cancer diagnosis is usually confirmed with histology or cytology. This is to ensure that the patient does have a malignancy. The precise histopathology will guide prognosis and influence the choice of treatment. For example treatments for small-cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC) are very different and therefore accurate histological diagnosis is essential.

Treatment decisions are also based on the stage of the cancer. Staging is based initially on clinical examination but is usually clarified with imaging such as CT, MRI or PET scans. The general health of the patient and presence of co-morbidities are also important as they may reflect the prognosis and influence the choice of treatment offered.

Once the information on diagnosis, stage and performance status is available a joint decision can be made between the patient, their family/whanau and the specialist. on whether treatment to cure the patient will be attempted or to offer palliative treatment alone.[13]

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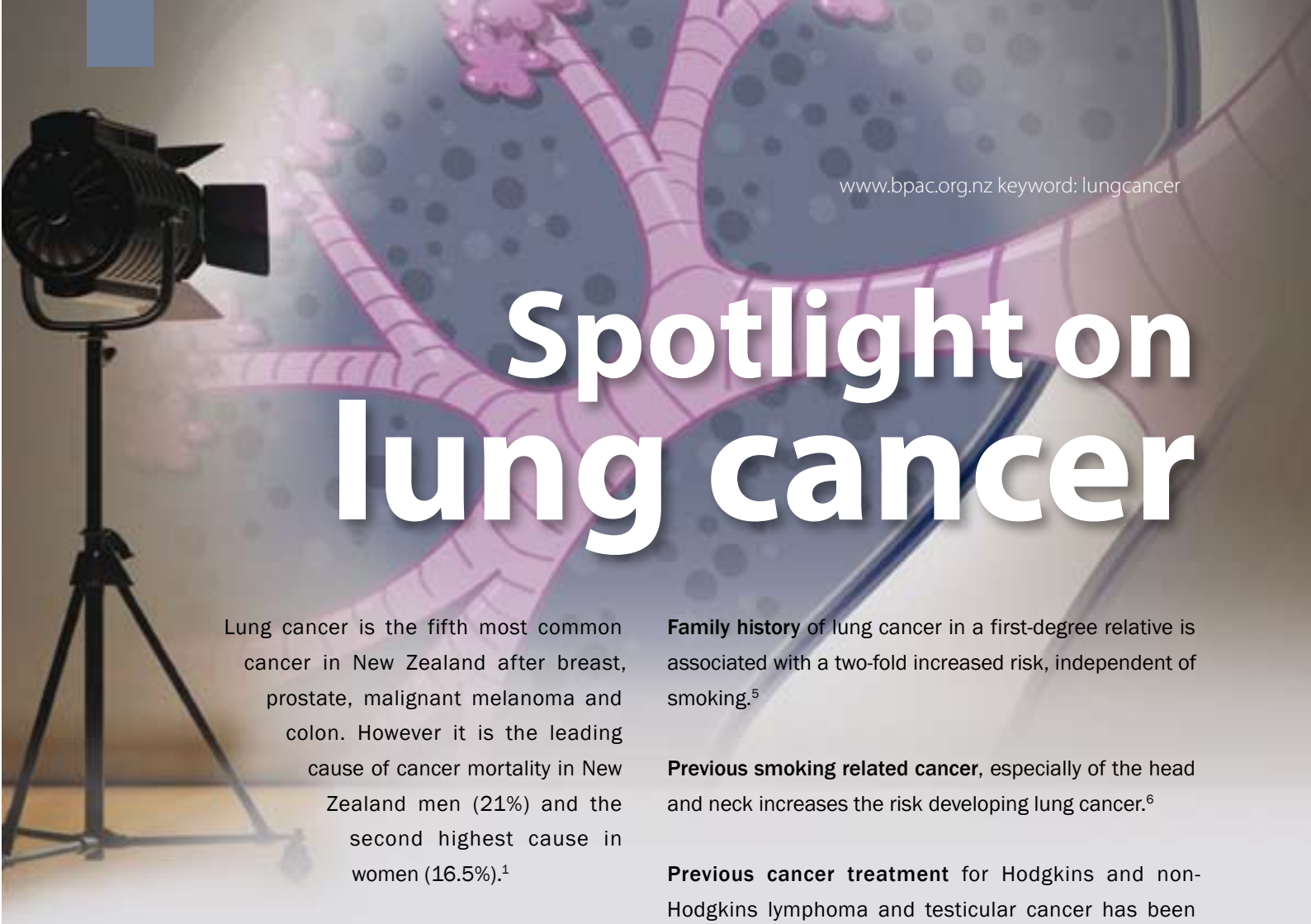

Spotlight on lung cancer

Lung cancer is the fifth most common cancer in New Zealand after breast, prostate, malignant melanoma and colon. However it is the leading cause of cancer mortality in New Zealand men (21%) and the second highest cause in women (16.5%).[1]

Lung cancer is rare before the age of 40, more common in Māori (see page 39) and 90% of people with lung cancer are smokers or ex-smokers.[1,2]

New Zealand has the worst survival rates for lung cancer in the developed world.[3]

Earlier diagnosis and referral can improve survival rates

The biggest influence on survival is the extent of disease at diagnosis. Lung cancer has one of the lowest survival outcomes of any cancer because over two-thirds of people are diagnosed at a late stage when curative treatment is not possible.

Identifying risk factors for lung cancer

Smoking is the largest preventable risk factor for lung cancer. The risk is increased further with smoking related COPD.[4]

Family history of lung cancer in a first-degree relative is associated with a two-fold increased risk, independent of smoking.[5]

Previous smoking related cancer, especially of the head and neck increases the risk developing lung cancer.[6]

Previous cancer treatment for Hodgkins and non-Hodgkins lymphoma and testicular cancer has been shown to increase the risk of lung cancer. The risk is higher in patients who have been treated with radiotherapy, particularly if they are smokers.[7]

Occupational exposure to carcinogens increases the risk of lung cancer (see sidebar over page).

Identifying symptoms of lung cancer

Making a diagnosis of lung cancer on clinical grounds alone is often not possible. Patients present with a variety of symptoms, mainly respiratory, that are difficult to distinguish from those of other diseases.[10]

Red flag symptom – unexplained haemoptysis

Referral for a chest x-ray should be considered in a person presenting with haemoptysis, unless it is the first presentation in an otherwise asymptomatic young person. The most common symptoms of lung cancer are cough, dyspnoea, weight loss and thoracic pain. Haemoptysis and bone pain are also relatively common (Table 1, over page).[6] Screening individuals without suspicious symptoms is not recommended.[11]

Occupational exposure to carcinogens

Occupational exposure to carcinogens contributes to 8.5% of lung cancer deaths in New Zealand.[8] Occupational causes should be considered in people who have a relevant work history (Table 1). N.B. In some cases, treatment may be covered under ACC.

Occupational exposures to lung cancer[9]

Lung carcinogen	Potential exposures
Arsenic	Timber preservation, sheep and cattle dips, horticultural pesticides, glass manufacture and some metal alloys
Asbestos	Plumbers, fitters and laggers, carpenters, builders, clutch and brake repairers, electricians, watersiders, asbestos cement producers, asbestos insulation sprayers and asbestos removal contractors
Chromium VI	Timber preservation, chromium plating and welding stainless steel
Coal tars/pitches	Coal gasification and coke production, foundries, road paving
Environmental tobacco smoke	Bars, restaurants N.B. smokefree legislation has reduced the level of this exposure
Silica	Sand blasting, mines, quarries, foundries, stone work
Soots	Chimney sweeps, building demolition workers, firefighters, any work involving burning of organic materials
Strong inorganic-acid mists containing sulphuric acid	Phosphate acid fertilizer manufacturing

Table 1: Initial signs and symptoms of lung cancer (adapted from NICE[6])

Common signs and symptoms	Other signs and symptoms
Cough Dyspnoea Weight loss Chest and/or shoulder pain Haemoptysis	Bone pain Finger clubbing Fever Fatigue and weakness Dysphagia Wheezing and stridor Hoarseness Pneumonia Enlarged lymph nodes Superior vena cava obstruction (SVCO)

When to refer

Referral for chest x-ray

A person should be referred urgently for a chest x-ray if they have unexplained haemoptysis or any of the following unexplained persistent signs and symptoms:[11]

- Chest and/or shoulder pain
- Shortness of breath
- Weight loss or loss of appetite
- Abnormal chest signs
- Hoarseness
- Finger clubbing
- Cervical and/or supraclavicular lymphadenopathy
- Cough
- Features suggestive of metastasis from a lung cancer

The NZGG define "urgent" referral for chest x-ray as being completed and reported within one week.[12]

The NZGG define "persistent" signs and symptoms as those lasting more than three weeks or less than three weeks in people with known risk factors.[11]

Best practice tip: A person with risk factors for lung cancer who has an x-ray showing consolidation should have a repeat chest x-ray within six weeks to ensure that this has resolved.

Sputum cytology is not recommended for the investigation of lung cancer, except if the patient is too unwell to undergo bronchoscopy. False positives are extremely rare so if positive the likelihood that there is cancer is very high. However it has a very low sensitivity and a negative result cannot be taken to exclude cancer.[10]

Referral to specialist care

A person should be referred urgently to a specialist if they have:[11]

- Persistent haemoptysis and are smokers or ex-smokers aged 40 years or older
- A chest x-ray suggestive of lung cancer
- A normal chest x-ray but where there is a high suspicion of lung cancer (see sidebar)

False negative chest x-rays in people with lung cancer[12]

Overall, chest x-rays may be reported as normal in one in four patients who are found to have lung cancer. The x-ray may be reported as normal but falsely negative for cancer:

- If the lesion is too small to be identified
- If the lesion is hidden behind intra-thoracic structures or the skeleton
- If the x-ray is of poor technical quality or is misreported

If clinical suspicion remains, usually as the result of continuing symptoms or the development of new ones, then further action is warranted. In this situation urgent referral to a specialist for CT scanning and bronchoscopy is recommended.

The case of the tight shirt collar

Recognising superior vena cava obstruction (SVCO)

A 62 year old man presents with a two week history of progressive dyspnoea on exertion, increased snoring and fatigue. He has noticed that his shirt collars have become tight. He is a current cigarette smoker of 15–20 cigarettes a day.

Examination reveals the classic signs of SVCO:

- Oedema of the face and arms
- Flushed face
- Cyanosis
- Dilated and congested veins over the arms, neck and anterior chest wall
- Stridor due to laryngeal oedema
- Papilloedema
- Dilated veins over the abdomen (collateral circulation has developed)
- Headache and confusion due to cerebral oedema

SVCO is a medical emergency and you make an immediate referral to specialist care.

Investigations in primary care are not recommended.

SVCO

SVCO can be due to external pressure or involvement of the vessel by cancer tissue or thrombus. It has mainly malignant causes - the most common is lung cancer.

The superior vena cava carries blood from the head, neck, arms, and upper chest to the heart. When obstructed, the increased venous pressure results in facial, neck and /or upper limb swelling.[13] Oedema may affect the larynx or pharynx and cause cough, hoarseness and stridor. Symptoms of cerebral oedema include headache, confusion and coma. Over time a collateral circulation develops diverting the venous flow through superficial veins.

Other associated symptoms are chest pain, dizziness, disturbed vision, nausea and nasal stuffiness. Symptoms and signs tend to be aggravated by postures that increase the venous pressure in the upper body such as lying down, bending over or raising the arms above the head. There may also be symptoms from the underlying aetiology e.g. lung cancer.

Symptoms and signs depend on the speed of onset of the compression and the degree of narrowing. Often the symptoms of SVCO develop over many weeks, but in approximately one third of patients the symptoms may develop in two weeks or less. In some cases symptoms improve as collateral circulation develops.

The case of the bloody tissue

A 43 year old woman presents with a one week history of cough and increased sputum production. This is the third time she had visited with a "bad cold". On this occasion she has noticed some blood in her sputum, which has also become green. She is a current smoker of 20 cigarettes per day. She has been struggling to keep her weight up over the previous few months and relates this to stress at work and the series of "bad colds".

Examination reveals:

- Erythematous throat with no tonsillar exudate
- Mild soft submandibular lymphadenopathy
- A few scattered rhonchi
- Weight loss of 4 kg since last month

There is no tachycardia, fever, cyanosis or finger clubbing. The trachea is central. There are no focal signs in the chest. Cardiovascular examination is normal.

You should refer for urgent chest x-ray or respiratory assessment.

Haemoptysis

Haemoptysis is the spitting or coughing up of blood that originated in the lungs or bronchi. Patients may be unsure where the blood is coming from and the first step is to differentiate between haemoptysis, pseudohaemoptysis (spitting of blood not derived from lungs or bronchi, commonly the nasopharynx) and haematemesis.

Haemoptysis is a common symptom. It occurs in up to 40% of people with bronchitis and is also seen in other less serious respiratory conditions. However it is a "red flag" symptom for lung cancer, pulmonary tuberculosis, pulmonary embolism and other serious cardiovascular conditions, as well as systemic diseases and coagulopathies. The likelihood of lung cancer being the cause of haemoptysis is increased when it is recurrent or persistent, and when accompanied by other symptoms such as dyspnoea, weight loss and anorexia and signs such as finger clubbing.[14]

The case of the wife who can't sleep

A 77 year old man attends surgery for his routine three monthly repeats. He has started coughing at night and his wife has asked him to get some cough mixture as he is disturbing her sleep. He is only producing a small amount of sputum that is white in colour. He has no weight loss, fever or night sweats. He would also like a repeat GTN spray as he has been using this more often for anterior chest pain but thinks it may be "a dud" as it doesn't seem to be working as well as usual. He has smoked for 50+ years, and has hypertension, ischaemic heart disease and chronic kidney disease. His current medications include: low dose aspirin, cilazapril/ hydrochlorothiazide MANE, GTN spray PRN, paracetamol, combivent inhaler 2 puffs QID, beclomethasone inhaler 2 puffs bd.

Examination is unremarkable. Peakflow is 340 L/min, a good result for him. However the history includes two suspicious features for lung cancer – a new cough and unexplained chest pain which does not appear to be cardiac.

You adopt a stepwise approach to diagnosing the cause of cough.[15]

1. You stop ACE inhibitor, check inhaler technique and arrange to review one week later
2. Cough is still present, the patient is already on bronchodilators so you trial promethazine and omeprazole to exclude upper airway cough syndrome (UACS) and GORD[16] and review one week later
3. The cough persists so you refer for chest x-ray

Cough is a common symptom of lung cancer but chronic cough is rarely due to malignancy

It is estimated that less than 1% of patients who visit their doctor with persistent cough will have lung cancer.[17]

The majority of lung cancers present to primary care with common respiratory symptoms.[18] The problem for the GP is to filter out very small number of serious cases that warrant urgent specialist referral for investigation of a possible cancer. This is difficult because many symptoms that could indicate cancer, such as cough, also have benign causes and the benign causes are more common.

Acute cough is invariably due to infection or asthma.[19] A cough that has continued for more than three weeks (chronic) is a diagnostic challenge but is still more likely to have a benign cause (Table 2). Apart from current smoking and ACE inhibitors, the three most common causes of chronic cough are upper airway cough syndrome (UACS, previously known as postnasal drip syndrome), asthma and gastro-oesophageal reflux disease (GORD).[20, 21] The timing of the cough and its character are not predictive of the cause.

Table 2: Causes of chronic cough in adults (adapted from Holmes et al, 2004)[21]

Common causes	Less common causes	Uncommon causes
ACE-I	Bronchiectasis	Aspiration
Upper airway cough syndrome	Eosinophilic bronchitis	Lung cancer and other malignancies
GORD	Post infectious cough	Irritable larynx
Asthma		Persistent pneumonia and abscess
Bronchitis		Tuberculosis
Smoking and other irritants		Sarcoidosis
		Psychogenic cough

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Aspirin for primary prevention of cardiovascular disease?

Aspirin is recommended for the prevention of cardiovascular disease in people at risk.[1,2] This includes those who have previously had a cardiovascular event (i.e. secondary prevention) and those with no history of cardiovascular disease (CVD) but who are at increased risk (i.e. primary prevention).

While the benefit of aspirin therapy for secondary prevention substantially outweighs the risk of harm such as increased risk of major bleeding, the balance of risk versus harm for primary prevention is less clear.

Recent papers have questioned the place of aspirin in primary prevention

Antithrombotic Trialists' (ATT) Collaboration

A recent meta-analysis of trials involving 95,000 participants investigated aspirin for the primary and secondary prevention of CVD.[3]

For primary prevention, aspirin was found to reduce serious vascular events by 0.07% per year compared with no aspirin, mainly due to a 0.05% reduction in non-fatal myocardial infarction. However aspirin significantly increased major gastrointestinal and other extracranial bleeds (0.1% per year with aspirin compared to 0.07% per year without aspirin).[3]

For secondary prevention, aspirin yielded a greater absolute reduction in serious vascular events (6.7% vs 8.2% per year) and had a similar effect on major bleeds as seen in primary prevention.[3]

The researchers concluded that when using aspirin for primary prevention, the absolute reduction in serious cardiovascular events is likely to be small, and is expected to be at least partially offset by a small increase in serious bleeds. They also stated that current evidence does not seem to support the routine use of aspirin in apparently healthy individuals with a more than moderate risk of CVD.[3]

Aspirin for Asymptomatic Atherosclerosis (AAA) study

Participants recruited for this study were asymptomatic but at risk of CVD as measured by ankle brachial index (ABI - the ratio of systolic pressure at the ankle to that of the arm).[4]

There was no significant difference in the rate of initial coronary event or stroke or revascularisation between those allocated aspirin or placebo. However major haemorrhage requiring hospital admission occurred in 34 patients taking aspirin compared to 20 in the placebo group.[4]

Researchers concluded that their findings do not support the routine use of aspirin for the prevention of vascular events in persons with a low ABI and no known cardiovascular disease.[4]

Aspirin for primary prevention of CVD in people with diabetes

This meta-analysis investigated aspirin for patients with diabetes and no pre-existing cardiovascular disease.[5]

When aspirin was compared to placebo there was no statistically significant reduction in the risk of major cardiovascular events, cardiovascular mortality, or all cause mortality.[5]

Researchers concluded that a clear benefit of aspirin in the primary prevention of major cardiovascular events in people with diabetes remains unproven.[5]

Drug and therapeutics bulletin review of aspirin in primary prevention

The November 2009 issue of the Drug and Therapeutics Bulletin contained a review of aspirin's place in the

primary prevention of CVD. They concluded that the current evidence does not justify the routine use of low-dose aspirin, for the primary prevention of CVD in apparently healthy individuals, because of the potential risk of serious bleeds and the lack of effect on mortality. This also included those with elevated blood pressure or diabetes.[6,7]

They advised that low-dose aspirin should not be routinely initiated for primary prevention. And for those already taking it for primary prevention, either as prescribed or over-the-counter treatment, the decision to stop or continue treatment should be made with patients after fully informing them of the available evidence.[7]

ACKNOWLEDGEMENT: Thank you to **Associate Professor Michael Williams**, Cardiologist, Otago DHB for expert guidance in developing this article.

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How does this change practice in New Zealand?

The New Zealand Cardiovascular Guidelines recommend commencing low dose aspirin as secondary prevention in those with clinical CVD and stroke or TIA and as primary prevention for those with a five year CVD risk greater than 15%.[1]

The advice in regards to secondary prevention remains unchanged. However findings from the recent studies have changed the advice for primary prevention.

Primary prevention with aspirin therapy does not now appear justified in the majority of people with cardiovascular risk factors given the uncertain net absolute benefits.[1]

Statins should be considered as first line therapy for primary prevention in those at moderate or high CVD risk given the significantly improved survival and large reductions in major CVD events.[8] There appears to be no benefit in adding aspirin to statin-based primary prevention, because any improvement in cardiac morbidity is offset by the increased risk of a major bleed.[3]

Patients without clinical CVD who have commenced themselves on over-the-counter aspirin, are often unaware of the risk of bleeding and should be advised to discontinue treatment.

Reconsider paracetamol use post-vaccination

Fever can be part of the normal inflammatory process after immunisation. Prophylactic paracetamol use is sometimes recommended. Recent research has questioned this practice.[1]

Two trials have demonstrated that giving paracetamol to infants after routine vaccinations lessened the effectiveness of the immunisation. The trials studied infants receiving their primary immunisations (at age three to five months) and booster immunisations (at age 12 to 15 months). The vaccines used in routine immunisations included haemophilus influenza, diphtheria, tetanus, pertussis, polio and hepatitis B.

459 infants were either given paracetamol every six to eight hours in the 24 hours following their injection or were given none (the control group) and their immune response and febrile reactions recorded.

Paracetamol was successful in reducing the risk of fever developing, however it also reduced the immune response to the vaccine, raising concern that the effectiveness of the vaccine may be reduced.

Although the prophylactic use of paracetamol brought about a reduction in immune response, using it once a fever developed did not appear to have the same effect. This means that parents or caregivers should not be concerned about giving paracetamol to treat a raised temperature, or associated pain and irritability, should it develop post-immunisation.

The researchers concluded that although feverish reactions were significantly decreased by the use of paracetamol, prophylactic administration of it should not be routinely recommended since antibody responses to several vaccines were reduced.

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Do you have a brilliant idea that you would like to share with your colleagues? Can you tell us about a mistake that you have learnt from so others don't fall into the same trap? What's new in primary care that people would want to know? Share your practice tips with us. Email: **editor@bpac.org.nz**

Oxycodone often initiated in secondary care

Dear bpac

Your recent article about oxycodone (Oxycodone – Place in therapy, BPJ 24 November 2009) raises the issue of best practice across the primary/secondary care interface. It seems that in order for primary care to undertake "best practice" medicine, messages need to be addressed at the secondary care level also.

For example a significant and increasing proportion of scripts for oxycodone are initiated in secondary care. Once a patient has been commenced on oxycodone, it is not usually in the patient's best interest to then negotiate a change to morphine.

There is an opportunity for primary care to take a greater leadership role in best practice in diagnostics and therapeutics across the primary/secondary care interface.

GP, Nelson.

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