The aim of this document is to provide clinical support for hospital staff in terms of supporting patients to stop smoking, even if this is just for a period of forced abstinence whilst in hospital. Being in hospital provides an opportune moment to intervene and provide both brief advice and support to stop smoking; including making a referral on to local stop smoking support. There are many benefits for a patient if they have temporary abstinence from smoking, including a shorter time for recovery and this can often stimulate a full attempt to stop smoking.

Why intervene in secondary care?

1. Hospital patients are more receptive to ‘Very Brief Advice’ (VBA) and an offer of support to stop smoking, as they are often experiencing a period of heightened motivation

2. Giving VBA to a hospital patient (the ‘3 A’s’: Ask, Advise, Act) can also encourage compliance to the smokefree hospital policy, and highlight any need for withdrawal management. Providing Nicotine Replacement Therapy (NRT) to a patient during a period of forced abstinence, will ease nicotine withdrawal symptoms

3. Stopping smoking can lead to significant health benefits, and reduce post-operative complications and improve recovery time

What is the aim of this ‘clinical case’ document?

The aim of this document is to provide clinical support for hospital staff in terms of supporting patients to stop smoking, even if this is just for a period of forced abstinence whilst in hospital. Being in hospital provides an opportune moment to intervene and provide both brief advice and support to stop smoking; including making a referral on to local stop smoking support. There are many benefits for a patient if they have temporary abstinence from smoking, including a shorter time for recovery and this can often stimulate a full attempt to stop smoking.
What is the relationship between smoking and renal function?

Constituents of cigarette smoke increase heart rate and blood pressure, promote atherosclerosis and thrombosis, increase lipid peroxidation and impair endothelial cell-dependent vascular dilation and the immune system. These are some of the most likely smoking related processes to effect renal function. Some cross sectional studies have shown that in individuals with no pre-existing renal disease, diabetes or hypertension, smoking is associated with an increase in renal vascular resistance, intraglomerular capillary pressure, proteinuria and a decrease in glomerular filtration rate compared to non smokers.\(^1\)\(^{-4}\) Smoking is an independent risk factor for renal failure, increasing the risk by about four-fold.\(^5\)

In addition, compared to non-smokers, smokers have an increased risk of the following:

- Microalbuminuria in patients with primary hypertension.\(^6\)
- Diabetic nephropathy and almost double the rate of progression to end-stage renal failure in type I and type II diabetic patients. The increased risk and progression rate are independent of age and disease duration.\(^7\)
- Progression to end stage kidney failure in men with primary renal disease.\(^7,\)\(^8\)
- Renal allograph loss.\(^9,\)\(^10\)
- Renal cell cancer.\(^11\)

What are the health benefits of stopping smoking for renal patients?

Successfully stopping smoking will not only benefit a patient’s long term health by reducing the risk of developing other disease,\(^12\) abstinence from smoking may help a patient recover quicker by eliminating the acute effects of smoking on the body and there is an evidenced benefit of stopping smoking in terms of renal outcomes (see page 3).
Main acute effects of smoking on the body
(estimated time of recovery, if known)

- Increase in sympathetic tone leading to an increase in blood pressure, heart rate and peripheral vasoconstriction leading to an increased demand for oxygen and cardiac function.\(^\text{13}\) (24 – 48 hours)

- Formation of carboxyhaemoglobin leading to a reduction in oxygen delivery to the tissues.\(^\text{14}\) (8 – 24 hours)

- Formation of carboxymyoglobin leading to a reduction in oxygen storage in the muscles.\(^\text{15}\) (8 – 24 hours)

- Increase in red blood cell production, which leads to an increase in blood viscosity, a decrease in tissue perfusion, a decrease in oxygen delivery to the tissues and potentiation of thrombotic process.\(^\text{16,17}\)

- Hypersecretion of mucus, narrowing of the small airways, decrease in ciliary function and change in mucus rheology leading to a decrease in mucociliary transport.\(^\text{16,17}\) (12 – 72 hours)

- Changes in functioning of a range of immune cells (pro- and anti-inflammatory cytokines, white blood cells, immunoglobulins) which lead to decreased immunity and are associated with atherosclerosis.\(^\text{16,17}\) (1 week – 2 months)

- Induction of hepatic enzymes which increases drug metabolism through both pharmacokinetic and pharmacodynamic mechanisms.\(^\text{18}\) (6 – 8 weeks)

Renal benefits associated with stopping smoking

- Decreased rate of progression of nephropathy in type I and type II diabetes.\(^\text{19–22}\)

- After controlling for the effects of other renal risk factors, stopping smoking is associated with a reduced risk of end stage renal failure.\(^\text{5}\)
Providing ‘Very Brief Advice’ to hospital patients: the ‘3 A’s’

Providing a stop smoking intervention to a hospital patient is proven to be effective regardless of the reason for admission.23 Offering VBA is the single most cost effective and clinically proven preventative action a healthcare professional can take24 and it is important to keep giving advice at every opportunity, as smokers may take several attempts to stop smoking successfully.25 In addition, by referring a patient to a local stop smoking service, they are four times more likely to stop smoking.26

Research shows that 95% of patients expect to be asked about smoking and a short intervention can make all the difference.27,28 The ‘3 A’s’ 30 second approach to giving ‘very brief advice’ are as follows:

ASK and record smoking status

ADVISE the patient of the personal health benefits of stopping smoking

ACT on the patient’s response
- prescribe NRT for patients in withdrawal
- monitor withdrawal and adjust pharmacotherapy accordingly
- refer to local stop smoking service

How was this information sheet put together?

This information is a summary of the current scientific evidence on the association between cigarette smoking and renal outcomes. Studies were found by searching MEDLINE and EMBASE using combined exploded subject headings of ‘kidney’, ‘nephrology’, ‘kidney diseases’, ‘kidney neoplasms’ and ‘tobacco use cessation’ from 01/1990 – 09/2012 and by searching for key words in google scholar.
The Clinical Case for providing stop smoking support to Renal Patients

References


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