# Lasers vaporised from NICE guideline recommendations for refractory angina

Christine Wright

**Author**

**Christine Wright**
Clinical Nurse Specialist

**Royal Brompton Hospital, Sydney Street, London, SW3 6NP.**

**Correspondence to:**
C Wright
**(c.wright@rbht.nhs.uk)**

**Key words**

hypervigilance, ranolazine, refractory angina

*Br J Cardiol* 2010;**17**:159–60

As from May 2009 the National Institute for Health and Clinical Excellence (NICE) have removed transmyocardial laser revascularisation (TMLR) from the list of treatments for refractory angina.[1] From their analysis of efficacy they found no evidence of improved myocardial perfusion, ejection fraction or prognosis. There was also no evidence for improvement in exercise tolerance or Canadian Cardiovascular Society (CCS) class when compared with other treatments. Furthermore, looking at the data on safety, randomised controlled trials showed evidence of increased myocardial infarction in the TMLR-treated patient group, as well as evidence of left ventricular perforation.

There have been reservations regarding this technique for many years and it would seem to be a valid decision on behalf of the specialist advisers. It seems appropriate, therefore, to look at how to best treat this complex group of patients.

## Recommendations

Members of the Canadian Cardiovascular Society have recently issued a position statement on refractory angina (RFA).[2] They have produced three recommendations:

1. Collect accurate data on the incidence and prevalence of RFA in Canada
2. To have a clear definition of RFA that reflects recent advancements in pain neuropathophysiology
3. To have joint CCS and Canadian Pain Society (CPS) guidelines.

The group are awaiting the results of a publicly funded study looking at the prevalence of angina six months after percutaneous coronary intervention (PCI). They are also hoping to establish a registry as part of a joint project with the CCS and CPS.

In order to expand on Mannheimer's widely quoted definition of RFA,[3] the authors suggest broadening it to take into account the neurological response to pain similar to that of chronic tissue injury. Angina is a complex somatic response that does not reliably reflect the amount of myocardial ischaemia and, even more confusing, a lot of ischaemia can be silent. To this end the authors suggest adding to the definition "…while the presence of reversible ischaemia must be clinically established to be the root cause, the pain experienced may arise or persist with or without this ischaemia." Being aware of this must assist healthcare professionals and patients in a better understanding of RFA, and it should also help prevent some inappropriate attempts at revascularisation or increasing anti-anginal medication.

## Collaboration

The close collaboration of cardiologists and pain management specialists is an excellent idea and hopefully it will in some way be reflected in the NICE review on stable angina soon to be undertaken.

As we have discussed previously, patients with RFA benefit from coming to a centre specialising in the condition.[4] The multi-disciplinary team should include a cardiologist, pain management specialist, cardiac surgeon and interventionalist, specialist nurse and psychologist.

Each case should be reviewed, and consideration given to the possibility that a new lesion is responsible for the symptomatology. Often myocardial perfusion imaging, stress echocardiography or magnetic resonance imaging can be useful in identifying patients who will benefit from intervention. If PCI is recommended for a complex lesion or chronic total occlusion, this should be undertaken by an experienced interventionalist. Coronary artery bypass grafting (CABG) and redo surgery is sometimes a possibility, although patients need to be fully aware of the risks and understand that often the procedure will not affect prognosis, but may relieve symptoms.

## Medical therapy

Medical therapy is of course the mainstay of treatment for angina and should not be looked on as the last of all the options. Trials such as Clinical Outcomes

Utilising Revascularisation and Aggressive Drug Evaluation (COURAGE) and Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery (SYNTAX) have helped us understand that medical therapy is a safe, and often preferable option. Heart rate control is important for reducing myocardial oxygen demand and this can be achieved with beta blockade, ivabradine or a non-dihydropyridine calcium channel blocker. Combination of these therapies is possible with careful monitoring of heart rate and symptomatology. The recently introduced ranolazine can also be considered.[5] This has been shown in trials to be safe and effective in treating refractory angina, and can be given in combination with other anti-anginal medications. It inhibits the late sodium current resulting in myocardial relaxation and reduces diastolic stiffness.

Pain management also has an important role in controlling symptoms. Patients with chronic pain, such as angina, can develop hypervigilance or an increased sensitivity to pain. The trigger of even a small area of myocardial ischaemia can evoke an exaggerated pain response often lasting one or two hours. Not only is this extremely debilitating for the patient, but there is the additional fear that it could herald a myocardial infarction, and often involves high-speed trips to hospital only to be discharged the next day with very little in the way of treatment or explanation. Pain medicine aims at amelioration of this neurological response and medication, such as tricyclic antidepressants or anti-epileptics, e.g. pregablin, can be effective. Opioids also have a role to play and can help certain patients return to daily activities.

Transcutaneous electrical nerve stimulation (TENS) is effective in relieving angina. It works by inhibiting painful stimuli to the brain. It is simple to use, but some patients find them inconvenient to wear, in which case a spinal cord stimulator is an effective alternative involving an internal spinal lead and generator. It is, however, more expensive and requires a day-case admission to have a temporary trial device fitted, followed by a further admission to implant the permanent system. Trials have shown them to be effective in relieving angina, but it would seem from recent experience that Primary Care Trusts remain to be convinced. Again it is hoped that this will be clarified in the updated NICE guidelines. Important contraindications to electrical nerve stimulation are pacemakers and other implanted cardiac devices.

## Psychological factors

Finally, but very importantly, the patients need psychological care. Healthcare professionals need to be aware of signs for anxiety and depression, social isolation, fear of mortality, misinformation and many other attendant effects of RFA. We need to be prepared to refer to the appropriate agencies or specialist hospitals. It is a mistake to think of this group of patients as 'end-stage'. They mostly have moderate-to-good left ventricular function and are, therefore, in a favourable prognostic group; sadly, many are unaware of this fact and live in fear. They need to be offered a comprehensive package of care including opportunities to join a cardiac rehabilitation group or home-based exercise and relaxation. It is often the case that they will have collected maladaptive beliefs about what the pain signifies and these thoughts are often more disabling than the actual pain. By addressing misconceptions about their symptoms, their quality of life can be markedly enhanced. This can often be achieved with a home-care package such as the Angina Plan,[6] and the guidance and support of a trained nurse.

The aim of treating these patients is to ameliorate the symptoms, with one or many of the strategies mentioned, such that the quality of life is enhanced, enabling the patient to live a more fulfilled life ●

### Conflict of interest

None declared.

## References


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