June 2003 (Vol. 52, No. 6)

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

What is the most effective nicotine replacement therapy?

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EVIDENCE-BASED ANSWER

No single nicotine replacement therapy is most effective for all smokers. All forms of nicotine replacement therapy (gum, transdermal patch, spray, inhaler, and lozenge) are equally effective, increasing smoking cessation rates by about 150% to 200%.[1,2]

A Cochrane Review found that 17% of smokers who had used nicotine replacement therapy successfully quit at follow-up vs 10% of smokers in the control group.[1] Except in special circumstances (medical contraindications, smoking <10 cigarettes daily, pregnancy, or breastfeeding), all smokers attempting to quit should be offered nicotine replacement therapy (strength of recommendation [SOR]: **A**).[3]

Higher doses of nicotine gum or lozenge (4 mg vs 2 mg) increase quit rates in heavy smokers.[1,2] Use of high-dose patches (>21 mg) may benefit heavy smokers or those relapsing due to nicotine withdrawal (SOR: **B**).[3] For relapsed smokers, combination therapy improves long-term abstinence rates (estimated abstinence 28.6% vs 17.4% for monotherapy) (SOR: **B**).[3]

EVIDENCE SUMMARY

A Cochrane Review of 110 trials evaluating the efficacy of nicotine replacement therapy in 35,600 smokers found higher quit rates among heavy smokers using 4-mg compared with 2-mg nicotine gum (odds ratio [OR], 2.67; 95% confidence interval [CI], 1.69–4.22).[1] However, patients often chew too few pieces of nicotine gum daily, resulting in underdosing.[3] Smokers should use the gum on a fixed schedule (at least 1 piece every 1 to 2 hours).[3]

The Cochrane Review finds borderline evidence of a small benefit in abstinence rates (OR, 1.21; 95% CI, 1.03–1.42) with higher-dose nicotine patches (>21 mg/24 hr or 15 mg/16 hr) for heavy or relapsed smokers.[1] Combining methods that maintain constant drug levels (transdermal patch) with those having more rapid

effects (gum, spray, inhaler, lozenge) is more effective than monotherapy (OR, 1.9; 95% CI, 1.3–2.6).[3] Reserve combination therapy for smokers who relapse following monotherapy.

Regarding concerns about weight gain, all nicotine replacement therapies delay but do not prevent weight gain. There is a dose-response relationship between nicotine gum and weight gain: smokers who use more gum gain less weight.[3] Although abstinence rates are comparable across the 5 available forms of nicotine replacement, smokers unwilling to give up oral and behavioral rituals of smoking may perceive the inhaler as being more helpful (**Table 1**).[4]

Decisions about the best form of therapy can be based on patient preference, on degree of nicotine dependence (a FagerstrÖm Test of Nicotine Dependence Scale score ≥5 [**Table 2**], or habitually smoking the first cigarette within 30 minutes of awakening),[5] or nicotine replacement therapy history, which includes number and outcome of previous quit attempts, specific method used, duration, side effects, and proper usage.

RECOMMENDATIONS FROM OTHERS

The Cochrane Review states: “All of the commercially available forms of nicotine replacement therapy are effective as part of a strategy to promote smoking cessation. They increase quit rates approximately 1.5 to 2 fold regardless of setting. Use of nicotine replacement therapy should be preferentially directed to smokers who are motivated to quit, and have high levels of nicotine dependency. Choice of which form to use should reflect patient needs, tolerability and cost considerations. Patches are likely to be easier to use than gum or nasal spray in primary care settings.”[1]

The US Department of Health and Human Services Clinical Practice Guideline states: “All patients attempting to quit should be encouraged to use effective pharmacotherapies for smoking cessation except in the presence of special circumstances.”[3] Heavy smokers should use 4-mg nicotine gum. Combining the nicotine patch with a self-administered form of nicotine replacement therapy (gum or nicotine nasal spray) is more efficacious than a single form of therapy. Patients should be encouraged to use combined treatments if unable to quit using a single form of first-line pharmacotherapy.[3]

Nicotine replacement therapy selection guide

	Moderate smokers (10–20 cigarettes/d)	Heavy smokers (>30 cigarettes/d)	Weight concerns
Gum		(4 mg vs 2 mg gum enhances quit rates)	(All nicotine replacement therapies delay weight gain, specifically

			nicotine gum)
Transdermal patch		(Small benefit of dosing >21 mg)	
Inhaler			
Nasal spray			
Lozenge		(Reserve 4 mg for heavy smokers)	
Combination			

FagerstrÖm test for level of nicotine dependence (abridged)

How soon after waking do you smoke first cigarette?		_____ **Points**
Less than 5 minutes: 3 points		
5 to 30 minutes: 2 points		
31 to 60 minutes: 1 point		
How many cigarettes do you smoke per day?		_____ **Points**
More than 30 per day: 3 points		
21 to 30 per day: 2 points		
11 to 20 per day: 1 point		
		_____ **Total Points**
Interpretation		
Total points	**Level of dependence**	**Nictotine replacement therapy**
5–6 points	heavy nicotine dependence	consider 21-mg nicotine patch
3–4 points	moderate nicotine	consider 14-mg

	dependence	nicotine patch
0–2 points	light nicotine dependence	consider 7-mg nicotine patch or no patch

CLINICAL COMMENTARY

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Now that nicotine replacement therapy is available over the counter, prescribers may not consider or discuss delivery options with patients as much as they did in the past. As this Clinical Inquiry illustrates, there are situations when one approach may be recommended over another.

For example, the relapsed smoker who has tried 1 nicotine replacement product may not even be aware that other methods, including combination therapy, are possible. Considering the enormous potential health improvement that is achieved through smoking cessation, this may be one of the most important topics to revisit regularly with patients.

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