

Tobacco Cessation: Action-Stage Result as a Predictor of Successful Long-Term Maintenance

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OBJECTIVE: The paucity of long-term studies makes it difficult to evaluate the sustained abstinence over time of smokers who quit. The objective of the present study was to determine to what extent the results of tobacco cessation interventions are maintained after 5 years.

PATIENTS AND METHODS: This was a longitudinal prospective study of 502 smokers. The design was quasi-experimental given that therapy was allocated according to the level of the patients' nicotine dependence: routine minimum intervention for smokers with mild addiction and those not in the preparation stage, and nicotine replacement therapy for patients with moderate-to-high dependence and/or a high level of tobacco consumption.

RESULTS: Of the 267 patients followed for 5 years, 29.6% quit and were still abstinent at 1 year, and 18.0% remained abstinent after 5 years. Of those who had managed to stop smoking within 2 months of starting the intervention, 47.4% were still abstinent on follow-up at 5 years while 88.1% of those who failed to quit within 2 months were still smoking 5 years later.

CONCLUSIONS: The results observed during the action stage could be of use in reorienting the treatment approach, and a planned schedule of follow-up contacts could help patients maintain the abstinence achieved in the course of the intervention.

Key words: Tobacco cessation. Continuous abstinence. Predictors of success.

Deshabitación tabáquica. Valor del resultado en la fase de acción sobre el resultado en la fase de consolidación

OBJETIVO: La escasez de estudios a largo plazo dificulta la valoración de la abstinencia mantenida en el tiempo de los fumadores que consiguen dejar de fumar. El objetivo de nuestro estudio ha sido determinar en qué medida los resultados obtenidos tras la intervención para dejar de fumar se consolidan en el tiempo, al cabo de 5 años.

PACIENTES Y MÉTODOS: Se ha realizado un estudio longitudinal y prospectivo sobre 502 fumadores, casi experimental, al considerar el grado de dependencia nicotínica como criterio para la asignación del tratamiento: intervención mínima sistematizada en los fumadores con dependencia baja o que aún no se encontraban en fase de preparación, y tratamiento sustitutivo con nicotina en aquéllos con dependencia moderada-alta y/o alto consumo de cigarrillos.

RESULTADOS: De los 267 pacientes que completaron el seguimiento a los 5 años, el 29,6% dejó de fumar y se mantuvo abstinentes al año de seguimiento, y el 18,0% a los 5 años. De los que consiguieron dejar de fumar a los 2 meses de la intervención el 47,4% consolidó su abstinencia al cabo de los 5 años de seguimiento, y de los que no lo consiguieron seguía fumando el 88,1%.

CONCLUSIONES: Los resultados observados en la fase de acción pueden considerarse un elemento de ayuda para reorientar la actitud terapéutica, y quizá el planteamiento de controles programados en el tiempo ayude a consolidar la abstinencia tabáquica conseguida durante la intervención.

Palabras clave: Deshabitación tabáquica. Abstinencia mantenida. Predictores de éxito.

This study was included in an application to the government of the autonomous community of Castile-Leon for financing to support research projects in the framework of a program implemented in 2005 aimed at the prevention and control of smoking.

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Introduction

According to the 2003 Spanish National Health Survey, 30.9% of Spanish people over 16 years of age are self-declared smokers, and this figure represents a considerable decline with respect to the percentage of smokers reported in previous surveys.¹⁻³ The main trends relevant to the study of tobacco consumption revealed by the latest National Health Survey are the consolidation of the decline

in smoking among men (prevalence dropped from 42.1% to 37.5%) and, for the first time, a fall in the percentage of women who smoke (from 27.2% to 24.7%). While the new data also evidence an increase in the number of ex-smokers, the upward trend observed in recent years appears to have slowed, with an increase in the percentage of ex-smokers of only 0.5% between 2001 and 2003 (from 16.8% to 17.3%).

In light of the poor results obtained by smoking prevention programs, several questions must be posed—including when, how, and by whom smoking cessation interventions should be undertaken.⁴ Numerous authors have suggested that the most effective investment is a strategy aimed at reducing the number of smokers by diagnosing and treating those who already want to stop smoking, and a number of articles have been published evaluating the efficacy and efficiency of the available treatments. Research has also been carried out to find predictors that may help to identify the smokers most likely to complete treatment successfully or to facilitate modification of the negative predictive factors and increase the likelihood of success in each patient. The only variables predictive of success that have been identified to date are related to the achievement of abstinence during the first 2 weeks of treatment.^{5,6} Other authors have reported that success in the final stages of treatment (at 8 weeks) is also predictive, making it possible to modify or prolong treatment when a change or an extension is considered necessary.⁷

Various limitations apply, however, including the fact that different criteria were used to define efficacy and no information is available on medium- and long-term outcomes because most studies only published short-term results. It is, in fact, only recently that a maintenance stage bringing the process to a close—for example sustained abstinence at 5 years—has been incorporated into the traditional stages-of-change model devised by Prochaska and diClemente.⁸

The objective of the present study was to ascertain what had happened after 5 years to smokers who had managed to quit as a result of a smoking cessation program implemented in accordance with the recommendations of the Spanish Society of Pulmonology and Thoracic Surgery (SEPAR) current at the time the program was started,⁹ and to analyze the predictive value of outcomes at 2 months (which had been shown to be predictive of results at 12 months⁷) on the rate of sustained abstinence after 5 years, that is, at the end of the maintenance stage. The treatments available at that time and used in this study still comply with current SEPAR recommendations (since the basic differences in more recent updates relate to the incorporation of new therapies for tobacco addiction and guidelines for their use).¹⁰ They are also in line with the consensus report on the treatment of smoking addiction issued by the principal scientific societies involved in the treatment of this condition.¹¹

Patients and Methods

The methodological and statistical design used for this prospective cohort study was similar to the one used in the earlier study mentioned above, adjusted where necessary to meet the

aims of the present study. The purpose of the earlier study was to assess the predictive value of results at 2 months with respect to outcomes at 1 year.⁷

The following inclusion and exclusion criteria were used. This study enrolled all smokers over 18 years of age treated for any reason at the family medicine clinic in the Centro de Salud San Juan or the outpatient department of the Hospital Universitario de Salamanca during the enrollment period (from January to July 1997) provided they were not excluded by the exclusion criteria. The exclusion criteria for the nicotine replacement group were those cited in the prescribing information for the transdermal nicotine patches and included recent heart attack, serious cardiac arrhythmias, unstable angina, pregnancy, breastfeeding, active duodenal ulcer, and severe mental illness. Addiction to any other drugs or refusal to take part in the study were considered motives for exclusion in both intervention groups. Current Spanish legislation governing the prescription of nicotine replacement therapy was observed in spite of the fact that numerous clinical trials have demonstrated that such treatment is safer than smoking in some of the groups for whom contraindications have been established by law.¹² The findings of those studies will no doubt lead to changes in the future in the relevant standards, guidelines, and consensus documents dealing with this topic.

Intervention

The personal details of each patient (name, age, sex, and contact telephone number) were recorded and a medical history was taken. The patient's smoking history was recorded as follows: daily cigarette consumption, daily nicotine consumption, pack-years, current stage in quit process, level of dependence (assessed with the Fagerström test), and breath carbon monoxide (CO) levels measured with a CO monitor (Bedfont Micro Smokerlyzer, Bedfont Scientific Ltd, Kent, UK).

The study is deemed to be quasi-experimental because therapy was not assigned randomly; patients were allocated to an intervention group according to the criteria of the SEPAR guidelines current at the time.⁹ All the patients were given medical advice and written support material appropriate to their stage-of-change status with respect to giving up smoking.

In patients with low nicotine dependence, treatment took the form of a behavior modification intervention (a routine minimum intervention). This intervention was complemented by pharmacological treatment (transdermal nicotine replacement therapy) in both highly dependent patients (those scoring 7 or higher on the Fagerström scale) and patients with moderate dependence (scoring between 5 and 6 points on the Fagerström scale) who were smoking more than 10 cigarettes a day or reported failure of previous quit attempts because of withdrawal symptoms. These criteria are in line with the current recommendations of SEPAR's Assembly on Tobacco Addiction.⁹ Patients in the precontemplation stage were given an informative leaflet about smoking, and those who were in the contemplation, preparation, and action stages were given both the informative leaflet and an additional booklet detailing the 10 steps to stopping smoking and a practical guide on how to quit. Patients were given the treatment and advice agreed upon by the participating physicians, following the SEPAR guidelines. The same physicians delivered the advice in an intervention that lasted approximately 3 minutes: the smoker was informed of the harm caused by smoking and the advantages, both in the short and the long term, of quitting.

Follow-Up

While the original protocol called for a 1-year follow-up period (with checkups at 2, 6, and 12 months) as recommended by the

clinical guidelines, for the purposes of this study the follow-up period was increased to 5 years. At this time, participants were contacted by telephone and asked to come to the clinic for routine testing. Tests included the measurement of CO in exhaled breath to confirm the patient's reported abstinence (a value of 10 parts per million (ppm) or higher was considered positive, indicating a smoker¹³). This was done despite the fact that patients' self-reported abstinence has been shown to be a valid confirmation of actual abstinence.¹⁴ During the check-up visits specified in the study protocol it was established whether or not the patient had stopped smoking. If the patient was still smoking the clinician recorded daily cigarette consumption, level of nicotine dependence, and breath CO as well as the patient's current attitude to quitting and whether this had changed since the beginning of the study prior to the intervention. The clinicians also reinforced the message previously transmitted to the patients in an effort to achieve abstinence in both groups of patients.⁷

Study Participants

The population of 357 subjects who participated in the initial study⁷ was increased to 502 because the authors continued to diagnose and treat smoking addiction in both participating clinics and it was considered useful to include all the patients for whom a sufficient period of time had elapsed since treatment to allow for a 5-year follow-up visit.

The results were analyzed according to 2 criteria: firstly on an intention-to-treat basis including the whole sample of 502 smokers; and secondly on the basis of results for only the 267 participants who were located and were considered to have completed the 5-year follow-up. In the first of these 2 methods participants who did not attend the scheduled follow-up visits were classified as lost to follow-up. As 235 participants (46.8%) were not located 5 years after treatment, the percentage of patients lost to follow-up at this stage was high and this would influence the results substantially. Patients were considered lost to follow-up when telephone contact was not established after at least 5 attempts, when the phone number proved to be erroneous, or when the patient had moved to another city, died, or simply failed to come to the appointment made by telephone.

In our opinion, the criterion for intention-to-treat analysis used in short term studies is not valid for medium- and long-term studies because patients taking part in such studies may be lost

to follow-up for reasons that are not strictly clinical. Consequently, we also analyzed data for the group of patients who were located and agreed to attend the 5-year follow-up visit.

Statistical Analysis

The data were analyzed as described above. The following is a description of the statistical analysis, which was identical to the method used in the previously cited study.⁷ Whether success at 2 months after treatment was predictive of success 1 and 5 years after treatment was assessed by calculating sensitivity, specificity, and predictive value with 95% confidence intervals (CI) obtained using the Diamond method. The available sample was large enough to allow us to obtain estimations of sensitivity and specificity with a precision of 8% for an alpha error of 5% assuming a value of 75% for both sensitivity and specificity.

The χ^2 test was used to compare the statistical significance of differences, with a level of significance set at a value of *P* less than .05.

Results

The study enrolled a total of 502 patients, 270 (53.8%) men and 232 women. The mean (SD) age was 40 (13.1) years, 44 (13.6) years for men and 35.3 (10.9) years for women (*P*<.001). The characteristics of tobacco consumption and nicotine dependence are shown in Table 1. Of the 502 persons initially enrolled in the study, 267 completed follow-up at 5 years. The percentage of participants lost to follow-up, which was 10% at 1 year, had risen to 46.8% after 5 years.

In the intention-to-treat analysis of the whole sample irrespective of type of intervention, 33.7% (95% CI, 29.6%-38.0%) of patients had stopped smoking 1 year after treatment and 14.5% (95% CI, 11.6%-18.0%) were still abstinent on follow-up at 5 years. The point-prevalence abstinence rates for the group of 267 patients who were located and completed follow-up at 5 years, were 37.8% (95% CI, 32.0%-43.9%) at 1 year and 27.3% (95% CI, 22.1-33.1%) at 5 years.

On analysis of the outcomes for the whole sample following the 2-month visit, we found that the abstinence rates were 25.7% (95% CI, 22.0%-29.8%) at 1 year and 9.6% (95% CI, 7.2%-12.6%) at 5 years. Abstinence rates for the group of patients who were located and completed follow-up at 5 years analyzed on an intention-to-treat basis, were 29.6% (95% CI, 24.2%-35.5%) at 1 year and 18.0% (95% CI, 13.6%-23.1%) at 5 years. The results by type of intervention are shown in Figures 1 and 2.

Of the group of patients abstinent 1 year after treatment, 135 (80.4%; 95% CI, 73.3%-86.1%) had not smoked since 2 months after treatment. Of the patients who were not smoking on follow-up at 5 years, 54 (75.0%; 95% CI, 63.4%-84.5%) had remained abstinent since 2 months after treatment. In the group of patients who received a minimum intervention and had quit within 2 months of the start of the study, 75.6% (95% CI, 64.9%-84.4%) were still abstinent at 1 year and 24.4% (95% CI, 15.6%-35.1%) at 5 years. Among those who received nicotine replacement therapy and were abstinent at 2 months, 61.7% (95% CI, 52.4%-70.4%) were still abstinent at 1 year and 29.2% (95% CI 21.2%-38.2%) at 5 years.

TABLE 1

Demographic Characteristics, Nicotine Dependence, and Tobacco Consumption in Both the Minimum Intervention (MI) and Nicotine Replacement Therapy (NRT) Groups*

	Total	MI	NRT
Total	502	234	268
Sex			
Men	270	128 (54.7%)	142 (53.0%)
Women	232	106 (45.3%)	126 (47.0%)
Age			
<30 years	118	77 (32.9%)	41 (15.3%)
≥30 years	384	157 (67.1%)	227 (84.7%)
Nicotine dependence			
Low	113	50 (24.8%)	17 (6.3%)
Moderate-high	389	176 (75.2%)	251 (93.7%)
Cigarettes/day			
<20	97	75 (32.1%)	22 (8.2%)
≥20	405	159 (67.9%)	246 (91.8%)
Breath carbon monoxide			
≤20 ppm	207	118 (50.4%)	89 (33.2%)
>20 ppm	295	116 (49.6%)	179 (66.8%)

*ppm indicates parts per million.

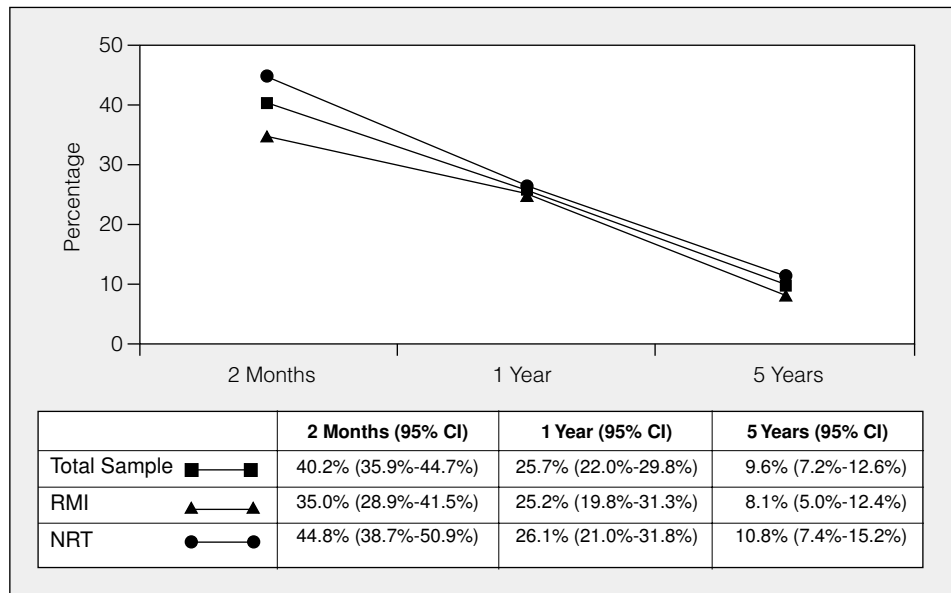


Figure 1. Continuous abstinence from 2 months after treatment on an intention-to-treat basis in the short, medium, and long term (total sample, 502 patients). CI indicates confidence interval; RMI, routine minimal intervention; and NRT, nicotine replacement therapy.

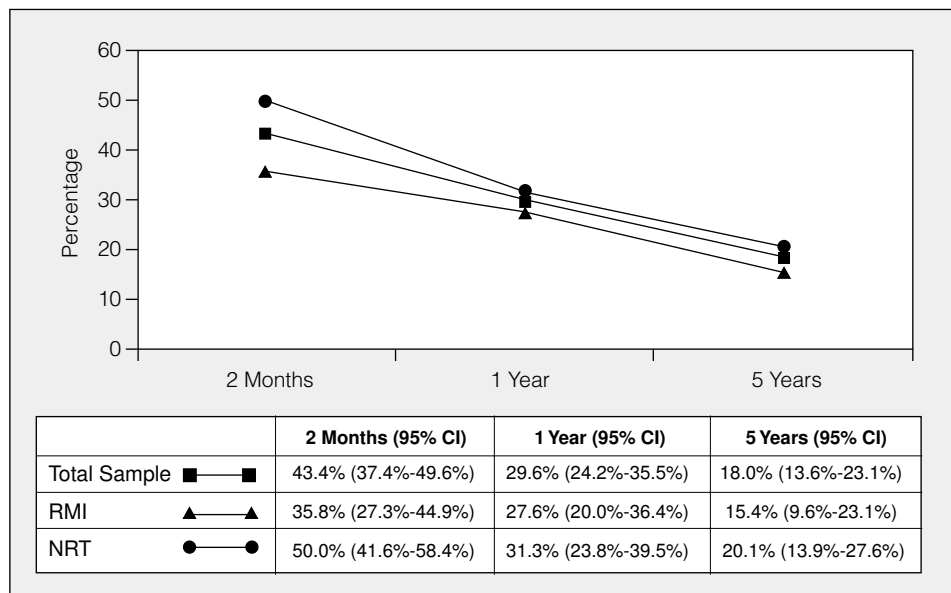


Figure 2. Continuous abstinence from 2 months after treatment on an intention-to-treat basis in the short, medium, and long term (patients located: 267). CI indicates confidence interval; SMI, routine minimal intervention; and NRT, nicotine replacement therapy.

Analysis of the sensitivity and specificity of the 2-month outcome as an indicator of the success of the intervention in the medium- and long-term in the whole study population showed that success at 2 months predicted 80.5% (95% CI, 74.5%-86.5%) of the smokers who were still abstinent at 1 year and 75.3% (95% CI, 65.5%-85.2%) of those still abstinent after 5 years (sensitivity). Abstinence at 2 months also predicted 80.2% (95% CI, 75.9%-84.5%) of those who were not able to quit smoking at 1 year and 65.7% (95% CI, 61.2%-70.2%) of those who were still smoking at the 5-year follow-up visit (specificity) (Table 2).

The positive predictive value of the outcome achieved at 2 months as an indicator of treatment success at 5 years was 27.2% (95% CI, 21.1%-33.4%).

In other words, a person who stopped smoking within 2 months of treatment had a 27.2% probability of still being abstinent at 5 years. Conversely, the probability that a patient who failed to achieve abstinence within the first 2 months would still be smoking 5 years after the intervention (negative predictive value) was 94.0% (95% CI, 91.3%-96.7%). Sensitivity was significantly lower and specificity significantly higher for patients in the minimum intervention group than for those receiving nicotine replacement therapy, as was the case at 1 year. However, whereas there were significant differences in both positive and negative predictive values of 2-month success between these patient groups at 1 year, these values were similar at 5 years (Table 2).

On analysis of the subgroup of patients who were located after 5 years and completed follow-up at that time, the sensitivity and specificity of the 2-month outcome as a predictor of treatment success at 5 years was not significantly different to the results for the whole sample. In fact, the positive predictive value was significantly higher (47.4% as against 27.2%). Irrespective of the sample analyzed, the predictive value of results at 2 months continued to decline significantly after follow-up at 1 year, falling from 67.3% at 1 year (Table 2) to 47.4% at 5 years (Table 3).

Discussion

In spite of the marked increase in published research on the treatment of smoking addiction in the short term,¹⁵⁻²⁰ there is still very little data in the literature on long-term outcomes and the correlation between initial results of treatment and final outcomes.

In our study, abstinence rates declined significantly between the 1-year and 5-year follow-up visits. Our results are somewhat similar to those of studies that include data on follow-up at 3 years, which report a continuous abstinence rate of 13.8%.¹⁵ However, they are lower than the figures found by García Vera¹⁹ at 5 years, who reported point-prevalence abstinence rates as high as 58.5% and continuous abstinence rates (over the preceding 12 months) of 33.1%. Our criterion for continuous abstinence was, however, much stricter (abstinence sustained throughout the whole 5-year follow-up period). Anthonisen et al²¹ reported abstinence rates at 5 years of 5.4% and 21.7%

depending on the intensity of the intervention. A more in-depth assessment of this question is not possible because of the paucity of long-term data.

Before evaluating the results of the present study, we think it necessary to make two points. Firstly, abstinence rates continue to decline after the 1-year period of abstinence usually used to define a person who has quit as an "ex-smoker," and an implication of this trend is that the definition of an ex-smoker may need to be redefined, perhaps by applying a new criterion of continuous abstinence for a period of not less than 5 years. Secondly, the criterion used to define success in these studies also needs to be reassessed, at least in studies providing long-term results. We believe that the criterion for success used in short-term studies, which is based on intention-to-treat analysis, is not useful in medium-term and particularly in long-term studies, which inevitably lose patients to follow-up for reasons unrelated to the study (geographic mobility, change of address or telephone number, death). As the length of the follow-up period increases, the number of subjects lost to follow-up will also increase. In our opinion, the number of patients lost to follow-up per year in our study is similar to the figure reported in other studies of similar characteristics, although it is higher in the later follow-up visits: Picardi et al²² report loss to follow-up of 9.2% patients at 1 year and 10.8% at 2 years. It does not seem reasonable to always attribute such losses to treatment failure. In our study, the search for and localization of patients was thorough and the objective difficulties that we encountered were quite unrelated to the success or failure of treatment. For this reason,

TABLE 2
Results of Intention-to-Treat Analysis for the Whole Sample
(Patients Lost to Follow-Up Are Deemed to Be Treatment Failures)*

	Results 1 Year After Treatment							
	Success at 2 Months		Failure at 2 Months		Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
	Success at 1 Year	Failure at 1 Year	Success at 1 Year	Failure at 1 Year				
RMI Group	62	20	25	127	71.3% (61.8%-80.8%)	86.4% (80.9%-91.9%)	75.6% (66.3%-84.9%)	83.6% (77.7%-89.5%)
NRT Group	74	46	8	140	90.2% (83.8%-96.7%)	75.3% (69.1%-81.5%)	61.7% (53.0%-70.4%)	94.6% (91.0%-98.2%)
Total	136	66	33	267	80.5% (74.5%-86.5%)	80.2% (75.9%-84.5%)	67.3% (60.9%-73.8%)	89.0% (85.5%-92.5%)
	Results 5 Years After Treatment							
	Success at 2 Months		Failure at 2 Months		Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
	Success at 1 Year	Failure at 1 Year	Success at 1 Year	Failure at 1 Year				
RMI Group	20	62	10	142	66.7% (49.8-83.5%)	69.6% (63.3%-76.0%)	24.4% (15.1%-33.7%)	93.4% (89.5%-97.4%)
NRT Group	35	85	8	140	81.4% (69.8%-93.0%)	62.2% (55.9%-68.6%)	29.2% (21.0%-37.3%)	94.6% (91.0%-98.2%)
Total	55	147	18	282	75.3% (65.5%-85.2%)	65.7% (61.2%-70.2%)	27.2% (21.1%-33.4%)	94.0% (91.3%-96.7%)

*CI indicates confidence interval; NPV, negative predictive value; PPV, positive predictive value; RMI, routine minimal intervention; NRT, nicotine replacement therapy.

TABLE 3
Results for the Group of Patients Who Were Contacted by Telephone and Attended the Clinic to Complete 5-Year Follow-Up*

	Results 1 Year After Treatment							
	Success at 2 Months		Failure at 2 Months		Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
	Success at 1 Year	Failure at 1 Year	Success at 1 Year	Failure at 1 Year				
RMI Group	34	10	16	63	68.0% (55.1%-80.9%)	86.3% (78.4%-94.2%)	77.3% (64.9%-89.7%)	79.7% (70.9%-88.6%)
NRT Group	47	25	4	68	92.2% (84.8-99.5%)	73.1% (64.1-82.1%)	65.3% (54.3-76.3%)	94.4% (89.1-99.7%)
Total	81	35	20	131	80.2% (72.4-88.0%)	78.9% (72.7-85.1%)	69.8% (61.5-78.2%)	86.8% (81.4-92.2%)
	Results 5 Years After Treatment							
	Success at 2 Months		Failure at 2 Months		Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
	Success at 1 Year	Failure at 1 Year	Success at 1 Year	Failure at 1 Year				
RMI Group	20	24	10	69	66.7% (49.8%-83.5%)	74.2% (65.3%-83.1%)	45.5% (30.7%-60.2%)	87.3% (80.0%-94.7%)
NRT Group	35	37	8	64	81.45% (69.8%-93.0%)	63.45% (54.0%-72.8%)	48.6% (37.1%-60.2%)	88.9% (81.6%-96.2%)
Total	55	61	18	133	75.3% (65.5%-85.2%)	68.6% (62.0%-75.1%)	47.4% (38.3%-56.5%)	88.1% (82.9%-93.3%)

*CI indicates confidence interval; NPV, negative predictive value; PPV, positive predictive value, RMI, routine minimal intervention; NRT, nicotine replacement therapy.

reporting results for the cases that were located may represent a more accurate reflection of the true success of treatment. In the group of patients who were contacted 5 years after treatment, the point-prevalence abstinence rate was 27.3%, and 18% of participants reported continuous abstinence. The similarity between these abstinence rates and the results obtained at 1 year may lend validity to the classic definition of an ex-smoker contrary to what was suggested above.

The present study was motivated by the same objective as the study published several years ago—to investigate the rationale for and the possibility of a change in treatment approach.⁷ The positive predictive value of action-stage outcomes was significantly lower at 5 years than at 1 year, regardless of whether the results are analyzed on an intention-to-treat basis or not. Taken together with the analysis of abstinence rates, this finding may be an indication that checking the smoker's status plays a key role in the success of the intervention. Although further studies may be needed to investigate and analyze the influence of such follow-up on the long-term results of tobacco cessation interventions, it is clear that the possibility of relapse persists for more than 1 year after the patient has quit. In any case, information on the probability of eventual success among smokers who manage to quit within 2 months of treatment will always be useful, particularly because, taking into account the foregoing comments concerning analysis of data on an intention-to-treat basis, it can be asserted that some 50% of patients in this group will remain abstinent and never start smoking again (Table 3).

Future studies will provide the means to redefine the concept of the ex-smoker if this is considered opportune, but at this time scheduling follow-up visits a year after treatment may help to consolidate the success of the intervention, although this type of follow-up will depend on the individual patient and will be conditioned by the nature of the care setting where the tobacco cessation intervention is undertaken. It is, in any case, advisable to check on patients at least every 2 years²³ and to consider the possibility of using telephone reminders that may help ex-smokers to remain abstinent.¹⁷

The results of this study clearly demonstrate that patients who are still smoking 2 months after treatment have an extremely low probability of quitting subsequently since the negative predictive values remain very high (Tables 2 and 3). It would, therefore, appear to be essential to change attitudes and rethink the therapeutic approach in the case of smokers who still want to quit but are smoking 2 months after the initial intervention.

The outcome obtained 2 months after the intervention can still be considered a useful indication of the strategy that should be followed in the treatment of the smoker. Their positive predictive value will depend on future decisions about how the results of tobacco cessation programs should be evaluated in the long term, but it should always be taken into account when treatment is being reviewed, particularly in light of the fact that health care professionals will soon (or in the more or less near future) have access to new pharmacological²⁴ and immunological (antinicotine vaccination)²⁵ treatments for nicotine addiction.

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