

Tobacco Dependence Treatment

The Role of Health Professionals in Tobacco Dependence Treatment, Treatment Possibilities.

Overview

Tobacco is an agricultural product processed from the leaves of plants in the genus *Nicotiana*. The addictive nature of tobacco comes from the characteristic alkaloid nicotine within. There is a degree of variation in extent of harmful effects of nicotine, tarry compounds, and carbon monoxide in tobacco smoke to different individuals and their tolerance. Because of the addictive properties of nicotine, smoking tobacco entails dependence and tolerance. Dependence can be psychosocial or physical (among 60% of smokers). There is however a large sector of smokers who are taking a step toward cessation of their smoking habit. Giving up the smoking habit can be so tough for many individuals that assistance is sought from health care professionals and sometimes by use of medications. Nicotine dependence level is vital for gaining estimation of withdrawal symptoms (their severity and treatment) and (especially) for Nicotine Replacement Therapy, NRT indication. A successful treatment can be arbitrarily defined as the complete cessation of tobacco products consumption for 6 to 12 months.

Tobacco Dependence

Tobacco dependence is defined as, "Cluster of behavioral, cognitive and physiological phenomena that develop after repeated tobacco use and that typically include a strong desire to use tobacco, difficulties in controlling its use, persistence in tobacco use despite harmful consequences, a higher priority given to tobacco use than other activities and obligations, increased tolerance and sometimes a physical withdrawal state" (Hughes JR).

Psychosocial Dependence

High and still increasing number of victims comprise of the teenage group of population, most commonly initiated under peer pressure.

Physical Dependence

Majority of the physical dependence cases are nicotine dependant. This has a higher frequency of relapse. Physical dependence can be measured roughly by the knowledge of smoking frequency in a day (10-15 cigarettes a day usually explains nicotine dependent) and the time interval between waking up in the morning & smoking the first cigarette (within an hour explains nicotine dependent). Fagerstrom Test of Nicotine Dependence entails a brief questionnaire to aid in quantifying the dependence type in more detail. This questionnaire comprises of point value system, which is usually assessed health assistant.

Cessation

Although stopping smoking can cause minor short-term side effects such as reversible weight gain, smoking cessation services and activities are cost-effective because of the positive health benefits. Early "failure" is a normal part of trying to stop. It has been estimated; only less than 10% of smokers are able to quit smoking on any given attempt without medicines or other help.

The FIVE A's

ASK

General history of smoking trend and pattern.

ADVISE

Strongly urge tobacco user to quit. However, the interaction with the tobacco user should be friendly, supportive, friendly and nonconfrontational. Important to convey the benefits of quitting. Present interesting and motivational facts that it only takes 20 minutes for your body to start undergoing beneficial changes. Within 20 minutes the blood pressure drops to normal. Within 8 hours Carbon-monoxide level in blood drops to normal. Within 24 hours to 48 hours chance of heart attack declines to half.

ASSESS

Determine willingness to make a quit attempt. The stages may be,

1. Not ready (Pre contemplation)
2. Unsure (Contemplation)
3. Ready (Preparation)
4. Action
5. Maintenance.

ASSIST

Give help and advice in drawing a 'Quit Plan'. Set progressive quit dates Tell family, friends, and co-workers about quitting, plan and seek their support. Anticipate challenges to planned quit attempt, particularly during the first critical few weeks

ARRANGE

Arrange a follow-up, especially during the first weeks of the commencement of therapy. Be aware and prepared for potential relapse (mean critical time is 3 months)

Pharmacotherapy

Medications available for tobacco cessation can broadly be divided into two groups: 1. Nicotine Replacement Therapy (NRT) 2. Non Nicotine Replacement Therapy

Nicotine Replacement Therapy

NRT is not a treatment for smoking. It is a method of substituting the nicotine in tobacco products by an approved nicotine delivery product so that the tobacco user does not have uncomfortable withdrawal symptoms upon stopping the tobacco product. Overtime, the dose of NRT is gradually reduced to make the process of cessation comfortable for the tobacco user. The release of nicotine into the blood, and thus its transport to brain is slower for NRT as compared to tobacco nicotine. As compared to blood levels of nicotine following tobacco smoke inhalation, NRT blood levels increase relatively slowly. Hence providing motivation and building patience for the user are essential.

Examples of NRTs include:

- nicotine patch,
- nicotine gum,
- nicotine inhaler,
- nicotine nasal spray.

Nicotine (Polacrilex) Gum:

- Contain 2mg or 4mg of nicotine. Nicotin is bound on prolarilex resin, which is eventually released under the action of mechanical chewing and subsequently absorbed by the buccal mucosa.
- It acts as an oral substitute and provides a source of nicotine that reduces the withdrawal symptoms experienced when tobacco use is stopped. The gum is available in different strengths and can be used on either at regular intervals or on an as needed basis. Tapering can be considered after 8 to 12 weeks.

Weaning of Nicotine Gum (NRT) involves decreasing the total number of nicotine gum (one piece every 4-7 days).



Nicotine patch.

Non Nicotine Replacement Therapy

This therapy technique exploits the use of medications which act on other similar nicotine sensitive neurotransmitters, thus proving effective regulation. This helps in overcoming the impulse to use nicotine and to minimize withdrawal effects. While with nicotine replacement therapy, the tobacco user immediately quits tobacco use upon starting NRT, in the case of non NRT medication, the user sets a stop date slightly further into the future after initiation of the medicine.

First Line drugs

1. *Bupropion* : Non-nicotine drug for treating tobacco dependence. It is an atypical antidepressant that has both dopaminergic and adrenergic actions. A quit date is decided within 7 to 14 days of starting treatment. This gives ample time to achieve the steady state plasma concentration of the drug.
2. *Varenicline*: This is a partial nicotine agonist that selectively binds to the alpha and beta nicotinic acetylcholine receptors in the brain. It dampens the physical pleasure from taking in nicotine and helps lessen the symptoms of nicotine craving. Tobacco use may be stopped one week after initiating treatment.

Links

Related Articles

- Tobacco Dependence
- Tobacco Dependence Prevention

Bibliography

- BENCKO, Vladimir, et al. *Hygiene and epidemiology : selected chapters*. 2. edition. Prague. 2008. ISBN 80-246-0793-X.
- CHAPMAN, - MACKENZIE, Ross. The global research neglect of unassisted smoking cessation: causes and consequences. *PLoS Med* [online]. 2010, vol. 7, no. 2, p. e1000216, Available from <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2817714/?tool=pubmed>>. ISSN 1549-1277 (print), 1549-1676.
- American Cancer Society. *Guide to Quitting Smoking* [online]. The last revision 2012-02-01, [cit. 2012-03-13]. <<http://www.cancer.org/Healthy/StayAwayfromTobacco/GuidetoQuittingSmoking/guide-to-quitting-smoking-success-rates>>.
- HUGHES, John R - GUST, Steven W. Symptoms of Tobacco Withdrawal. *Archives of General Psychiatry*. 1991, y. 48, vol. 1, p. 52-59, ISSN 1538-3636.