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A STUDY OF ADDICTION MEDICINE

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ABSTRACT:

The Addiction medicine is a medical specialty that deals with the treatment of addiction. The specialty often crosses over into other areas, since various aspects of addiction fall within the fields of public health, psychology, social work, mental health counseling, psychiatry, and internal medicine, among others. Incorporated within the specialty are the processes of detoxification, rehabilitation, harm reduction, abstinence-based treatment, individual and group therapies, oversight of halfway houses, treatment of withdrawal-related symptoms, acute intervention, and long term therapies designed to reduce likelihood of relapse.

INTRODUCTION:

Some specialists, primarily those who also have expertise in family medicine or internal medicine, also provide treatment for disease states commonly associated with substance use, such as hepatitis and HIV infection. Physicians specializing in the field are in general agreement concerning applicability of treatment to those with addiction to drugs, such as alcohol and heroin, and often also to gambling, which has similar characteristics and has been well-described in the scientific literature.

There is less agreement concerning definition or treatment of other so-called addictive behavior such as sexual addiction and internet addiction, such behaviors not being marked generally by physiologic tolerance or withdrawal.

Doctors focusing on addiction medicine are medical specialists who focus on addictive disease and have had special study and training focusing on the prevention and treatment of such diseases. There are two routes to specialization in the addiction field: one via a psychiatric pathway and one via other fields of medicine.

The American Society of Addiction Medicine notes that approximately 40% of its members are psychiatrists (MD/DO) while the remainder has received primary medical training in other fields

Concept of Drugs:

The World Health Organization (WHO) defines drug as any substance which, introduced into the living organism can modify one or more of its functions.

The presence of drugs in many civilizations goes back to time immemorial. Greeks and Romans deified wine with the figures of Dionysus and Bacchus, respectively. Historically, drugs have been linked to magical-religious rituals, celebrations and social events. Gradually their use became widespread in other contexts. Some of these substances are natural in origin, as is the case with tobacco or cannabis. Others are the result of chemical processes carried out using natural products, like what occurs with alcoholic beverages, which are obtained from the fermentation or distillation of grain or fruit juice. Drugs are also produced artificially. This is the case for drugs for psychiatric use or for synthetic drugs.

Need of Drug Analysis:

The number of drugs introduced into the market is increasing every year. These drugs may be new entities or existing partial structural modifications [1]. From the date the

drug enters the market, there will usually be a period of delay until the drug enters the Pharmacopoeia.

This is because the continued and widespread use of these drugs may have uncertainties, report new toxicities (causing them to exit the market), long standing opposition developments and the introduction of better drugs by competitors. Under these conditions, the standard and analytical procedures for these drugs may not be available for pharmacopoeia. Therefore, it is necessary to develop new analytical methods for such drugs.

Quality is important for every product or service, but it is critical for life-related drugs. Quality control is a concept that aims to produce a perfect product through a series of measures designed to prevent and eliminate errors at different stages of production.

The decision to issue or reject a product is based on one or more control actions. With the development of the pharmaceutical industry in recent years, the rapid development of the field of drug analysis for complex instruments, providing a simple analytical procedure for complex formulations is the most important issue.

In short, the reason for developing an updated drug analysis method is that the drug or combination of drugs may not be official in any pharmacopoeia.

Due to limitations of patent regulations, the appropriate drug analysis procedures may not be available in the literature. The Analytical methods may not be used for the formulation of drugs due to interference caused by the formulation excipients; Analytical methods for drug quantitation in biological fluids may not be available,

Analytical methods that combine technetium with other drugs may not be available for Existing analytical procedures may require expensive reagents and solvents. It may also involve cumbersome extraction and separation procedures, which may not be reliable.

Chromatographic Methods:

The Modern pharmaceutical formulations are complex mixtures containing one or more therapeutically active ingredients, for a number of inert materials such as excipients, disintegrates, color and flavor.

In the order to ensure that the quality and stability of the final product, pharmaceutical companies, and the analyst must be able to separate the mixture into individual components for quantitative analysis.

The Chromatography is a powerful technology that enables the differential between the components in two stages, one of which is known as the stationary phase and the other one is movable, is a moving stage. The sample species have been repeated interactions (partition) between mobile and stationary phase by phase.

The Stationary phase may be solid or liquid (supporting a solid or gel) and packed in a column, expanded to a layer or film. The mobile phase may be gaseous or liquid. These solutes, distributed priority in the mobile phase, and will quickly through the system, the distributed priority phasing. This forms the basis of the Split components.

A One example [4]. A solute between the two phases, from the balance of forces between the solute molecules and elements of each phase. It reflects the relative attractiveness, or repulsion molecule or ion the competitive phase, the solute and them. These units can be used in the polarity of the induced and permanent dipole moments. In the ion exchange chromatography, the forces in the solute molecules will go a long way in the ionic nature, including polar and non-polar forces.
Chromatography Method must have in essence,

- Stationary phase
- Mobile phase
- Sample injection system
- Solvent delivery system
- Column phase
- Detection by detecting agent

All chromatographic methods involve modifications in these basic components

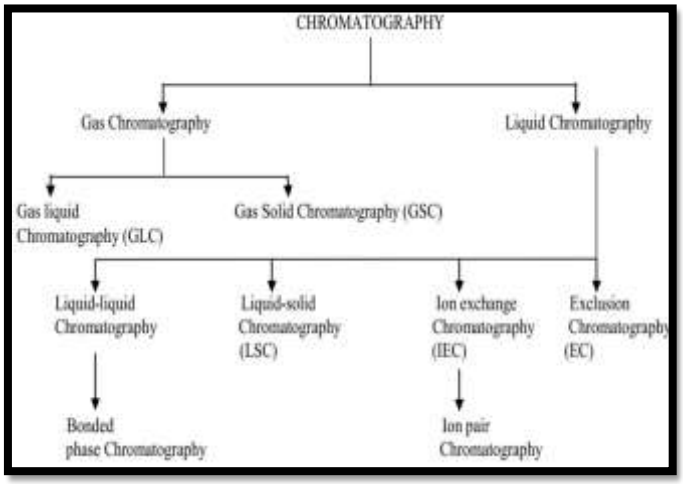

Figure 1.1 Showing Classifications of Chromatographic Methods

The Chromatographic methods can be classified according to the nature of the stationary and mobile phases [6].
The different types of chromatography are:

- Adsorption chromatography
- Partition chromatography
- Ion exchange chromatography
- Size exclusion or gel permeation chromatography.

The modern instrumental techniques of GLC and HPLC provide excellent separation and allow accurate assay of very low concentrations of wide variety of substance in complex mixtures.

High Performance Liquid Chromatography (HPLC):

This is a sophistication of the century-old technique and is the most widely used of all the analytical separation techniques [7]. In high performance liquid chromatography (HPLC) the liquid mobile phase is forced through the stationary phase under pressure [8]. A simple HPLC includes a solvent reservoir to hold the mobile phase, a pump to pressurize the mobile phase, [9] and injector to allow injection of a small volume of the sample mixture under high pressure, a column containing the bed of stationary phase, a detector to detect the presence of components as they exit the column, and a recorder to record the detector signal [10].

Most of the drugs in dosage forms can be analyzed by HPLC technique because of the several advantages like rapidity, specificity, accuracy, precision and ease of automation in this method [11]. HPLC method eliminates tedious extraction and isolation procedures. Some of the advantages are

- Speed (analysis can be accomplished in 20 minutes or less)
- Greater sensitivity (various detectors can be employed)
- Improved resolution (wide variety of stationary phases)
- Reusable columns (expensive columns but can be used for many analysis)
- Ideal for the substances of low volatility
- Easy sample recovery, handling and maintenance
- Instrumentation tends itself to automation and quantitation (less time and less labor)
- Precise and reproducible
- Calculations are done by integrator itself
- Suitable for preparative liquid chromatography on a much larger scale.

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