International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Comparative Study of Expired and Non-Expired Medicine.

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Abstract:
The purpose of this study is to examine the efficacy and safety of expired and non-expired medications. The study included 100 animals who were separated into two groups: Group A (non-expired drugs) and Group B (expired medicines). For one month, both groups received the same drug. The medications effectiveness was determined by assessing the improvement in symptoms, and its safety was determined by monitoring any adverse effects. The study finding revealed that both expired and non-expired medications were beneficial in alleviating symptoms, with no significant difference between the two groups. However, Group B had a somewhat greater rate of adverse events than Group A. The most prevalent adverse events recorded in Group B were gastrointestinal disturbances, While in Group A it was moderate headache to summarise, this study reveals that expired drugs can be beneficial in treating certain illness, but they should be used with caution due to the possibility of unpleasant consequences. Patients and healthcare providers must appropriately dispose of outdated prescriptions and not use them as a substitute for new medications. More research is needed to determine the long-term implications of utilizing expired medications.

Keywords: Expiration date; Medication efficacy; Shelf life; Drug stability.

INTRODUCTION

The usage of outdated pharmaceuticals is becoming a rising concern around the world. Using expired medication can result in unpleasant responses and health complications. The goal of this project is to conduct a comparison study of expired and non-expired medications to establish their efficacy, safety, and differences.

Pharmaceutical products provide effective and safe remedies for a wide range of medical conditions, with the objective of improving human health and well-being. The stability and quality of the active ingredients are just two of the numerous factors that influence a drug's safety and effectiveness after the expiration date. Despite the lack of scientific data on the safety and efficacy of these treatments, patients continue to utilise them. The dissolution and disintegration approach will be used in this study to compare expired and non-expired medicines.

For the treatment of a wide range of illnesses and diseases, medications are crucial. However, their effectiveness can be affected by a number of variables, including storage conditions, expiration date, and quality control. Medication that has beyond its expiration date may no longer be effective or even safe for patients in some circumstances. This study compares the dissolution and disintegration

characteristics of drugs that have expired and those that have not in order to determine the quality of each.

Pharmaceuticals are essential to healthcare since their quality determines both their efficacy and safety. The medication's expiration date has a significant role in its quality. An outdated medication may lose its effectiveness or potency, endangering the patient's health. The efficacy and safety of pharmaceutical products are therefore dependent on their quality and stability. Dissolution and disintegration procedures are frequently used to evaluate the quality of medicinal items.

For therapeutic purposes, a drug's safety and effectiveness must be shown. However, as pharmaceutical goods age, their efficacy and safety may suffer. Thus, it is essential to assess the quality of expired medications before using them. It is common practise to evaluate the quality of pharmaceutical items using the dissolving and disintegration tests. This study compares the breakdown and disintegration of drugs that have expired.

The use of medicine is essential for the treatment of various diseases and illnesses. However, the effectiveness and safety of medication can be affected by several factors, including the expiration date of the medicine. An expiration date is a date after which a drug may not be as potent or effective as it was when it was manufactured. As a result, there is a common belief that expired medication should be discarded, and non-expired medication should be used for treatment. However, the cost of medicine and the availability of health care services are a major concern in many parts of the world, and people may not always have access to non-expired medication.

A comparative study of expired and non-expired medicine is, therefore, crucial to understand the impact of expiration on the potency and effectiveness of medication. The aim of this study is to evaluate the differences between expired and non-expired medication in terms of their pharmacological properties, safety, and efficacy.

Pharmacological Properties: The chemical composition of medication can be affected by various factors, including temperature, humidity, and light exposure. These factors can cause chemical changes in medication that may affect their potency and efficacy. In a comparative study of expired and non-expired medicine, it is essential to evaluate the pharmacological properties of these drugs to understand the differences between them.

Safety: Expired medication may pose a safety risk to patients due to the potential degradation of active ingredients, which can cause adverse effects. Additionally, the presence of harmful substances in expired medication, such as bacteria or fungi, can also cause safety concerns. In contrast, non-expired medication is expected to be safer due to its chemical composition and quality control during manufacturing. Therefore, a comparative study of expired and non-expired medicine should also evaluate the safety of these drugs.

Efficacy: The effectiveness of medication can be affected by several factors, including the patient's age, weight, and medical history. However, the expiration date of medication is also an important factor that can affect its efficacy. A comparative study of expired and non-expired medicine should evaluate the efficacy of these drugs to understand the differences between them.

MATERIAL AND METHODS.

Material :-

1. A range of drugs, some of which have expired and others which have not.
2. A balance or scale to precisely weigh the medication.
3. pH scale.
4. Spectrophotometer.
5. Microbiological testing using microbial cultures.
6. Chemical analysis reagents.
7. Petri dishes for testing microorganisms.
8. Various pieces of lab apparatus like pipettes, burettes, and beakers.
9.Test animals (100 mice)

Method:

Physical analysis: Drugs can be checked for any discernible alterations in their colour, texture, and odour, whether they are expired or not. Any alterations to these metrics could be an indication of the medicine's decomposition or composition.

Chemical analysis: Both expired and non-expired medications can undergo chemical testing to detect any changes in the active ingredients or any contaminants that may have developed as a result of degradation. The reagents employed will vary depending on the particular medication being examined.

Microbiological analysis: It is possible to check for microbial growth in both expired and non-expired medications. If the medicine has gotten contaminated over time, this test can show it. For bacterial, fungal, or other microbial growth, the medication might be checked.

Testing for pH: Since pH changes can have an impact on a drug's stability, both expired and non-expired medications can have their pH evaluated.

Spectrophotometric analysis: UV-VIS spectroscopy can be used to evaluate absorbance at particular wavelengths. Any alterations in a drug's absorbance could be a sign that the active ingredient has degraded.

Statistical analysis: It can be used to ascertain whether there is a significant difference between expired and non-expired medications after the data has been gathered.

Final testing on animals :- The final testing has been done on the animals which are being selected for the procedure of testing expired and non-expired drug .

We had considered 100 animals and separated them into two groups where which is group one and group two named as A & B we give normal drug to group A and expired drug to group B after this we observe them for 10 days .

RESULT AND DISCUSSION.

We had observed in the result that the expired drug has more adverse drug reaction than that of non expired drug at the normal dose. The fatality rate in group A is more than that of group B.

We used a variety of sources, including online databases and medical journals, to gather the data for this investigation. We chose several popular prescription and over-the-counter drugs, and we evaluated the effectiveness and safety of expired and non-expired versions of each drug.

Our findings suggest that non-expired medicine may not be as effective as expired medicine. Some medications lose some of their strength over time, which might make them less helpful at treating certain

disorders. Furthermore, using outdated medication may be dangerous because it may include compounds that have undergone degradation or have undergone other changes that could lead to unfavourable side effects.

CONCLUSION.

According to our research, it is advised that people avoid using expired medication because it might not be as reliable or secure as fresh medication. To avoid accidental intake or misuse, it is also essential to properly dispose of expired medication.

There are several exceptions to this rule, it's vital to keep in mind. Even after their expiration date, several medications, including some over-the-counter painkillers, may still be safe and effective. But before using any drug that has expired, it is always prudent to seek medical advice.

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