

Effectiveness of Bio-Drugs and Therapeutics in Modern Day Treatment

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Abstract

Modern medicine and procedure of treatment is important in the fields of emergencies and infectious disease in aid to cure. Biologics or bio-drugs are generally defined as a wide range of products that includes various vaccines and gene therapy. The present research tries to evaluate the effectiveness of Bio-drugs in the modern medical science and the functions of therapeutics in the modern day treatment. Qualitative and secondary data collection method has been used in order to evaluate and analyse the present research.

Keywords

ADR, ankylosing spondylitis, bio-drugs, somatic cells, therapeutic protein, therapeutics.

INTRODUCTION

Rationale

In modern day conventional medicine can be the alternative of the traditional way of treatment and may involve the usage of drugs and different surgical processes. Modern medicines used in order to treat patients in modern day and get more prompt feedback in order to cope up with disease.. **Modern medicine and procedure of treatment is important in the fields of emergencies and infectious disease in aid to cure.** Different researchers and clinicians from different fields aim to prevent the diseases with modern treatment procedures and emphasis on the longevity of the well-being. Advances in the field of medicine and vaccines for different diseases make it easy for the clinician in order to cure the problems of humans [1]. Due to the changes in the lifestyle of the modern people, the healthcare system needs to be more scrutinized and deserve special attention. **The importance of bio-drugs has increased in recent times due to its predictability of genetic propensity in several diseases.** Several foremost accomplishments of modern science and pharmacy can be represented by the bio-pharmaceuticals as the drugs are being used practically in different branches of medicine. The present study aims to understand the effectiveness of the drugs in modern day treatment.

Aims and objective

The main purpose of the research article is to scrutinize the effectiveness of biologics in the modern day treatment. The research grails have been tranquilized in order to understand the effectiveness and appraise the findings of the research. Objectives of the present research are mentioned below:

- To evaluate the effectiveness of Bio-drugs in the modern medical science.
- To understand the functions of therapeutics in the modern day treatment.

- To analyse the workable strategy of the bio-drugs and therapeutics in order to get a positive outcome of treatment in the present day.

LITERATURE REVIEW

Function of Bio-drugs

Biologics or bio-drugs are generally defined as a wide range of products that includes various vaccines and gene therapy. As per [10], **bio-drugs can be recombinant of therapeutic proteins and tissues, somatic cells, allergenics** and many more. Bio-drugs can be a complex combination of nucleic acids, proteins and sugars. However, the biologics or bio-drugs are basically procured from different natural sources [9]. Different immunity related diseases such as **ankylosing spondylitis, psoriasis and inflammatory bowel disease** can be treated by biologic drugs. The main function of the bio-drugs in the immune system related disease in order to act and interrupt the pathways and signals in such a manner that helps to decrease the desecration imposed by the conditions [10]. However these drugs do have some side effects and can only be used with the concern of the clinicians in order to avoid any horrifying effect. As mentioned by [11], the usage of bio-drugs and biological therapies have become more widespread in recent times and become an approved notion for the modern day treatment. In these circumstances it becomes more important in order to understand the side effects and take necessary steps in order to withstand the side effects.

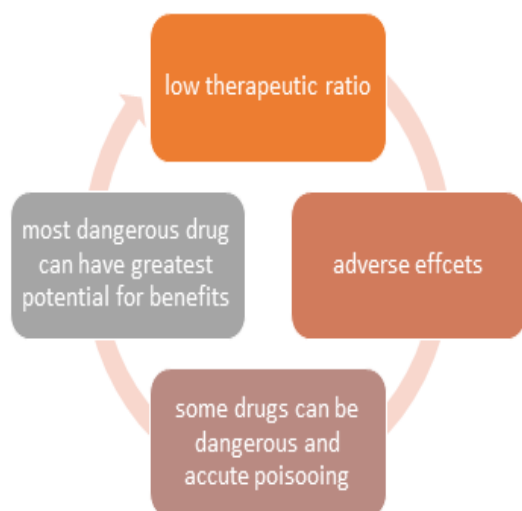


Figure 1. Good and Bad effects of bio-drugs
(Source : Self-developed)

Effectiveness of therapeutics

Therapeutics is basically the desired effect of a drug in the human body or in medical science. Therapeutics helps in order to understand the effectiveness of a medication or drug in the body. As per the view of [12], *there is a systematic effect of all medication in the human body and sometimes it may cause side effects in the body.* Generally, all drugs are more or less harmful for the body but no drugs can be harmful if they are used properly and as prescribed. As per Mir *et al.* (2017), some of the drugs have a low therapeutic ratio and some have high ratio, however, *some drugs also have some low prevalence of dreadful effects.* In order to remain healthy and decrease the horrifying side effects of a drug, the drugs needs to be used therapeutically and as prescribed by the professionals. Some of the drugs can be menacing in acute poisoning but if the same drug is used therapeutically it can be beneficial for the health [15]. Moreover it can be seen that the most dangerous drugs can have the substantial benefit and potentiality if used properly. As per the research of [14], Adverse Drug Reactions (ADR) can be a result of the unwanted effect of therapeutics from the drugs that have been used to treat the patient.

Theoretical underpinnings

Risk to benefit ratio theory: The risk-benefit ratio theory helps in understanding the risk of a candidate in order to take a drug and the benefit as well. This generally seeks to analyse in order to quantify the benefits and the risk and find the ratio of the two. The analysis of the risk and benefit enormously depend upon the human factor or upon the patients. As mentioned by [17], the risk-benefit ratio seeks to find out the risk and benefits of the research participants and understanding the stabilization. There are many components that can affect the ratio of risk and benefit of a particular participant. In the present study, for the theoretical understanding, the risk-benefit ratio can be appropriate as it looks for both the risk and benefits of taking a bio-drug for different treatment.

Research Gap

In recent times the usage of different kinds of drugs for the treatment has become an important step for medical science. The biologics or the bio-drugs are leading in the medical science and modern treat as one of the important agents. Many researchers have worked on the bio-drugs and the therapeutic effectiveness, however some more focus needs to be given to the risk factors of the bio-drugs with low therapeutic ratio. It needs more attention to the risk to benefit ratio of any drug that has been prescribed. Duration of the treatment and tailoring of the dose can be the point of focus for the future researchers in this field. However, the present study tries to evaluate the effectiveness of the bio-drugs and therapeutics in modern medical science. There has always been a further scope for the future researchers in order to understand the diverse effect of the bio-drugs. The models help in understanding the acceptable risk factor to the severity.

METHODOLOGY

Research philosophy

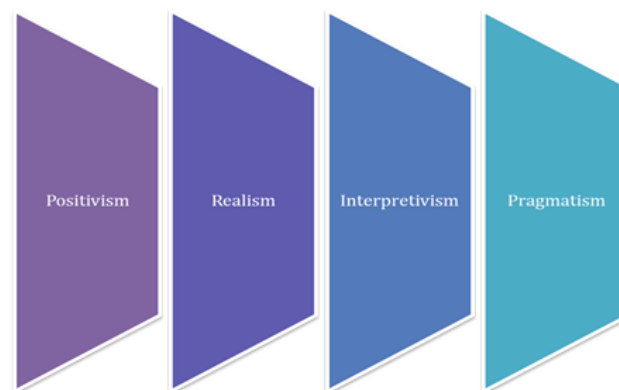


Figure 2. Research Philosophy
(Source: Benitez-Correa *et al.* 2019).

In the present study, the *positivism research philosophy* has been taken in order to evaluate and analyse the collected information. The positivism philosophy seeks in order to inquire the outcomes of the research. As suggested by Pogosyan (2018), the principal research topic can be addressed in different manners for different philosophies. *In the present research the positivism philosophy can be appropriate as it seeks to find outcome and quantify the objectives of the research.* In this present research, effectiveness of bio-drugs needs to be analysed with help of quantify observation and for this reason positivism philosophy is selected. It deals with the authentic knowledge of a phenomenon that can be helpful for the present study.

Research approach

A proper research approach can be a salient part of conducting a research study. In order to evaluate the

information of the present research, the *Qualitative research approach* has been used. The qualitative data is nominal in nature and can be helpful in order to gather data about different bio drugs and its effectiveness in the human body. As suggested by Adhabi and Anozie (2017), the qualitative approach helps in order to find the consequence of a research and aims to find the root cause of the phenomenon. The present research is based on the various gathered data from different secondary sources that need an *in-depth evaluation that can be only possible by using the qualitative approach.*

Research design

The framework for the different research techniques can be the proper research design for a proposed research. It is an important part of a research methodology as it describes the different methods and types of research that has been involved in the study. In the present study, the *descriptive research design* has been taken into consideration in order to gather data about the biologics and therapeutics effects. *The present study deals with the theory based knowledge of the present research objectives therefore, descriptive design can be appropriate for the present study.* This design will help the researcher in order to understand the therapeutics effects of different bio-drugs used in the modern treatment.

Data collection method

Data collection method is basically a classic procedure in order to gather the information about different parts of a given phenomenon. *In the present study, secondary data collection techniques have been used* to collect information

from various reliable sources. As mentioned by [16], the secondary data can be collected on the basis of previously collected primary data from different sources such as books, journals, newspapers etc. In the present research the secondary data will help in understanding the effectiveness of different biologic drugs and the risk benefit ratio.

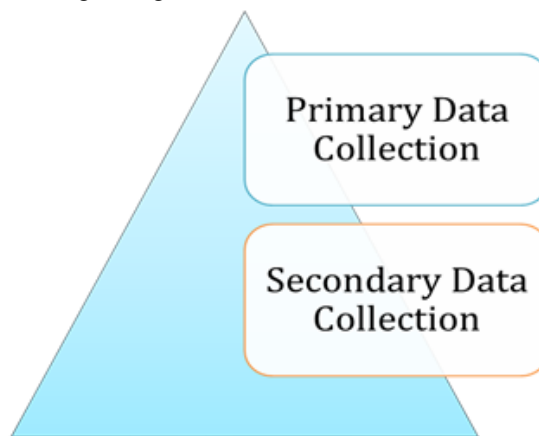


Figure 3. Data Collection methods
(Source: influenced by [16])

DATA ANALYSIS AND DISCUSSION

Analysis of Data

Table 1. Systematic Review of the Present Study

(Source: Self-developed)

Source	Findings	Significance
Dadar <i>et al.</i> 2018	The research highlights the foster of the therapeutic vaccines and the treatment regimens against the HPV. The topical microbes play an important role in the interception of HPV infection.	The researchers tried to review the present scenario as well as the futuristic prospects in order to understand the advanced therapeutic perspective against HPV (Human papillomavirus).
Ghanemi and Yan, 2017	The study seeks to understand and focus on the needs of the patients and innovation of new bio-drugs in order to maintain the public satisfaction.	The research review emphasises on the ethical overview of the placebo as well as the disadvantages with the context of biopharmaceutical innovations.

Jiménez-Pichardo <i>et al.</i> 2018	The research paper shows that Bio-drugs present a comparatively high annual rate of change during the commercialization without any efficiency.	The research paper seeks to analyse the variability of the Bio-drugs innovator and the prescribers' knowledge.
Li <i>et al.</i> 2016	The review of the research helps in understanding the important role of biotherapy and the advancement of bio therapy in the rapid translation of experimental biomaterials.	This research article reviews the use of Bio-materials in the bio-therapy including the stem-cell therapy and tissue engineering, gene therapy and immunotherapy.
Yan and Ghanemi, 2017	Ethical awareness can be the basic point for the invention of bio-drugs and its therapeutic usage as it can affect the mortality rate in sustainability. This research seeks the attention of the pharmaceuticals in order to take responsible steps for the innovation.	This research paper helps in understanding the role of responsible guidelines for the biopharmaceutical practitioners in order to maintain the ethical standard during the process of innovation of drugs.
Dhama <i>et al.</i> 2018	The findings of the research helps in understanding the computational approach in genomics that needs to be employed in order to safeguard human health against the virus.	In this research article the researcher seeks to find the advances in the recent times in germs of developing vaccines and drugs for treating Ebola virus.

Discussion

The systematic review of the present study puts a light on the efficiency and effectiveness of different bio-drugs on the modern day treatment. The systematic analysis also helps in understanding the therapeutic value of a biologic drug in the human body. As per the findings of [2], the ***therapeutic vaccines need to be developed in order to fight against the HPV that targets the capsid proteins by the recombinant DNA technology.*** The usage of topical microbes in the prohibition of HPV infections explored through the study of the researcher. There is a wide role of the pharmaceutical professionals in order to understand the role of bio-drugs for a particular disease and in order to understand the therapeutic effect of the drug. As per Li *et al.* (2016), in ***the biotherapies, many significant attainments have been made in order to treat different critical diseases.***

In biotherapy the role of biomaterials has been increasing in order to enhance the treatment in the various fields of modern medicine including gene delivery and regenerative medicine. In an overall view of the systematic review, it can be stated that the importance of bio-drugs is increasing in the modern day that may have some therapeutic side effects. Different ***polymer-based particulate delivery systems*** have also been used for the vaccination in modern medical science. The erratic effect of different drugs can be higher in the elderly persons and it can be harmful for them.

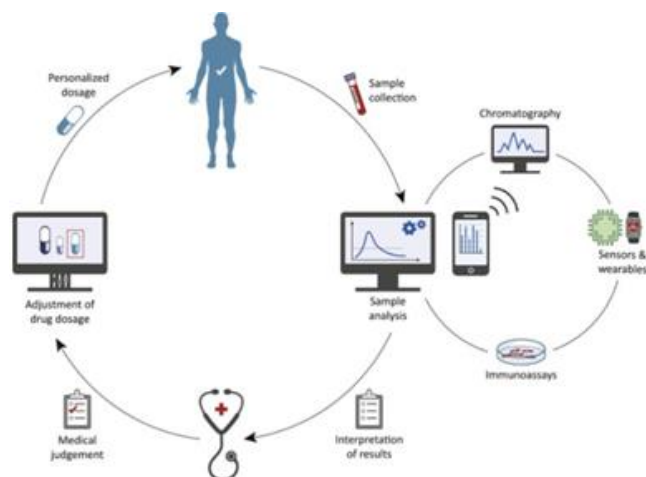


Figure 4. Therapeutic Drug Monitoring
(Source: Developed by [19])

RECOMMENDATION AND CONCLUSION

Conclusion

The clinical practice of different biologics provides a wide spectrum for the medical science and the treatment of different diseases in present times. Biologic drugs generally tend to treat many diseases and improve the condition of the patients. Different bio-drugs can be used to treat different diseases with advanced therapies. From the view of the present research it can be concluded that some of the drugs can be menacing in acute poisoning but if the same drug is used therapeutically it can be beneficial for the health. It can be also seen that different adverse drug reactions can be resulting in the undesirable effects of the drugs. The erratic effect can be seen more on the elderly population and have a noticeable effect on their health.

Recommendation

Every research has a multiple scope for further clinical evaluation as it has diverse effects and multiple characteristics can be evolved. It can be recommended on the basis of the present study that bio-drug should always be taken with the permission and proper guidance of the pharmaceutical practitioners or the experienced clinicians. Some of the drugs are dangerous and can have acute poisoning effects on the body. The prescriber should always take in mind the age, different comorbidities at the time prescribing a bio-drug as the therapeutic effect may not always go in favour of the patient and can have horrifying effects.

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