

A Comprehensive Note on Future of Medicines and Future Medicines

Devansh Mehta^{1*}, Mohd Shuaib¹, Mohd Ali²

Abstract: Medicines were present in the past and are present today and will be present in future as well. Medicines or Drugs are the substances which help in sequential elimination of the symptoms or the disease itself. In Pharmacology, a medicine or a drug, is defined as any chemical entity which helps in diagnosing, mitigation, cure and removal of pathogenic factors from the patient's body. Drugs if used unconventionally or illegally have devastating effects on the human body; hence its use other than medical reason shall be avoided or prevented. Today, we have seen lot of research being conducted to develop and discover lead compounds, which through subsequent clinical trials testing are inculcated in medical treatment of ailments or diseases anywhere in the world. Humans or the mankind is doing really hard work and scientists and researchers are really burning their midnight oil to bring or come up with molecules or drugs which can help in better treatment strategies of the acute as well as chronic ailments. In recent decades, I would say, from the beginning of mid last millennium we have come up with really fascinating blockbuster molecules and drugs which help us in handling the present human ailments highly effectively as well as efficiently. But still there are numerous diseases and human ailments for which effective drugs are not present still. We are heading towards, a highly fast paced and digital world. Technology and newer tools and techniques have been discovered which gives the medical workforce to deal with ever increasing complexities of diseases and their occurrence among us.

INTRODUCTION

Whenever we think of medicine or medical world, we right away think of technology and scientific discoveries happening in and around us. Well in present age, we find most of the scientists and researchers and even medical practitioners talk about the technology induced advances in the field of medicines. Most of the think-tankers think of advances we will see in 5, 10 and 20 years' time.

From our vision the real advances have been done already, what we lack is the right vision. If you would stop for a five minutes and think keeping aside the knowledge you read these days.

We are heading towards repeating the history back in new form and new clothing's. The point is, these days most of the research is happening in plant medicines. If you think of the oldest origin of medicines, it lies in the Hindu manuscripts. The Ayurveda is the oldest form of medicine world over and nowadays as the blockbuster molecular model is a thing of past, the real diamond lies in plants. In fact the future of medicines will be more enhancement of the biodiversity and the nature in which we pretty well live in. In future, the molecule based medicines will be replaced by around 50 %. I think that well in coming 10 to 20 years, Plant based medicines and ayurveda will replace the global market, by around 70%.

The real gem and the idea is nature has itself has no side effects of itself. These plant medicines have no side-effects, plus they help in irradiating the disease deep from the roots. I have personally researched on plant medicines and discovered that antioxidants and some phytoconstituents have ability to remove and heal the ulcers even caused by the microbe named, *Helicobacter pylori*. No doubt, chemical

based medicines do have ability to treat and relieve the patient from the deteriorating and rapidly damaging conditions of the patient's health. But, if time permits, these ailments can be very well dealt with the help of phytotherapy and plant medicines. The future would be like, generating the diagnosis in and on Real time basis. The future aspect will be more advanced diagnostic instruments and techniques in order to generate the data super-fast. This data if generated can help in detecting the possible occurrence of for say cardiovascular event in the patient well 6 to 10 months in advance. Learning from these data and awareness thanks to super-fast diagnostic tools, the treatment can be very well started with the help of Churna's and Ayurvedic treatment.

Ayurvedic treatment will in future no doubt will monopolize not only in country of its origin, i.e. India, but the knowledge will spread to other parts of the world and in every nook and corner. From my personal experience, my mother had been diagnosed with Colloid Goiter, around 7 months back. I was worried that my mother had neck cancer. We went to a GP and went through two common tests; one was the Neck Ultrasound and the other Neck biopsy. To our surprise, the diagnosis was Colloid Goiter. We went to the well-known surgeon and physician in our city and he suggested a surgery as the only option. As allopathy medical world had no other treatment for this surprising disease than a simple surgery. Somewhere in my mind, the knowledge and belief on plant medicines, moved me to take a chance and we went to Jiva Ayurvedic clinic.

The doctor an Ayurvedic practitioner looked at the reports and suggested taking some bunch of Ayurveda medicines for my mother. We are in 3rd month of the treatment and happy to understand and know, that the Colloid Goitre which was about to be treated by the surgery, has been treated by simple mixtures of plant medicines and ayurvedic churna's.

Well that's a small story and these are occurrence's happening slowly but providing an everlasting

¹Department of Pharmacy, Kalka Institute of Research and Advanced Studies, Kalka Group of Institute, Partapur By-pass Road, NH-58, Meerut-250110, Uttar Pradesh, India.

E-mail: mehta.d@trmwriters.com

*Corresponding author

²Department of Pharmacognosy and Phytochemistry, Faculty of Pharmacy, Jamia Hamdard, New Delhi-110062, India.

impression, that yes, the nature has cure for your disorders and has every possible solution for your all medical occurrence's.

The future also lies in nano-technology. Nano-particles are being researched where they can be used as smart bullets and kill the cancer cells. Sonia Trigueros, Nano-bio-systems group leader at Oxford University and former co-director of the OMS Institute of Nanomedicine suggests, that Nano-medicines and Nano technology will take care of the rapidly degrading natured diseases in the future. Highly advanced clinical trials and researches are happening in this space. Be it cancer, or diabetes, or any other chronic ailment. The Nano-medicines which can be thought of the size, if you understand that a normal newspaper is just about 1000000 nanometers thick, such small particles are the Nano particles which can be used singularly or together as combination therapies and can really work wonders, at the Nano level right in the patient's body and that too in the Real time basis. [1]

Medical Diagnostic Industry is Advancing at a Very Faster Pace

We can see the future, where more clear and highly Nano biomarkers can be used as diagnosing tools which can help in understanding the nature of our body not only at present micro level, but at the real time Nano level.

Nano-Biomarkers will be soon thing of current situation in the coming 10 to 15 years' time and will completely revolutionize the way imaging and diagnosing world functions in present situation. [2]

I hadwrote a paper few weeks back on microbiological coding. Well, Medical coding is present in US and some of the other countries. Well I think that microbiological coding and nano coding will also be the thing which would reflect in coming future in the field of medicine.

Now, whenever we think of, "Future Medicines, Broadly, there are 2 to 5 spheres which can be looked upon or predicted, if we really want to understand that, what will be the Future medicines?

1. Phyto-Medicines

Plant medicines, herbal medicines, phytoconstituents present in the medicinal plants, are way better than the chemical or molecule based drugs. Reason being, they are natural in origin and thus, have no side effects on ailing body. Flavonoids, anti-oxidants, phytochemicals, are the products which are extracted from the medical plants or herbs, which can be transformed into lead compounds and can be enhanced or sharpened to bring much better effects on the diseased body.

There is a separate stream in drug industry, which is phytochemistry, which specifically focuses on doing research on the phytochemicals extracted from the medicinal plants and can be researched to find out the possible pharmacology properties and hence new tool to deal with the ailments or diseases which the humans nowadays face, every now and then.

Phyto-Medicines have highly large scope in the form of research and deep study scope which can help us reveal the

miracles these plant compounds possess for the benefit of mankind.

Alcoholic compounds, flavonoids, triterpenes, etc. are some of the phytochemicals which have wide range of pharmacological properties, or in other words, medicinal properties, which can be used in real time basis for personalized or targeted treatments of the disease present today, or the diseases for which no therapy exists currently, or the diseases which would emerge in future times.

2. Nano-Medicines

Nano particles or Nano molecules can be imagined as small as highly distinguished substances of the size which are smaller than around 1000000 thickness of a regular newspaper.

Nano-Medicines have the potential of penetrating the cells and parts of the body, where the present conventional compounds or molecules find hard to reach.

Nano-Medicines can really help in carrying out targeted therapies and management of the diseases such as dreading cancer or even HIV.

Nano-Medicines developed through rigorous biotechnology tools, can help us to discover nano molecules which can help us in treating and mitigating the ailments which the present molecules fail to do so, or fail to reach the level at the size even smaller than the molecular level.

3. Bio-Remedies

In near past and current times, biotechnology is doing a great work, in order to figure out or engineer a drugs, which can be highly beneficial to pharmaceutical and biotechnology sector.

As the age of Blockbuster molecular model, is now a thing of past and with the ever increasing strictness by the drug regulating bodies around the world. Biotechnology has emerged as winner in current times.

It is predicted that Biotechnology would help in engineering the molecules either synthetic or natural in origin, which can really help us to provide advanced tools and techniques in the hands of medical practitioner around the world, to deal with the diseases on real time and fast paced basis.

4. I-Medicines

I-Medicines, are nothing but the Intelligent medicines. With the coming up of new concept of Internet of Medical things and smart pills, the future would have in its hands Intelligent medicines.

I-Medicines will be self-motivating medicines or drugs which would handle the disease once injected in the body on its own. It will not only help in controlling the emergence of symptoms which are uncomfortable to the patients, but will regularize themselves, in order to deal with the advances or the progression of the disease by the invading pathogens or by the immune systems targeting their own cells in patients body.

5. Personalized Medicines

Genetically engineered personalized medicines will be the thing of commonality in the coming future. Scientists have discovered the genetic origin and reason behind various forms of diseases and ailments. With this knowledge, we have known that since each body is genetically different from the other, same is the case of disease of one body being different from the similar disease in another body.

By understanding the genetic makeup of the patient's body, newly synthesized and personalized medicines can be developed and that too in the real time basis and the patient would be treated at the personalized level.

CONCLUSION

These are the areas where the medicine will be the future. Such medicines will be highly powerful and will be highly effective as well as efficient in dealing with the diseases and their occurrence in the patient's body. Artificial intelligence or the intelligent medicines will be certainly a big reality in the coming future. The future generations would be smarter, much more informed and aware. Plus, the medical practitioners will be smart enough to kill the reason behind the dangerous and deadly diseases with just using these smart and intelligent drugs or medicines.

Several points and ideas, we do have mentioned above, but we really believe that our Karma's would benefit us in coming future and we would be our self-healers. Personalized treatments and awareness regarding the diseases and how they function will really help the generations to come to be smarter compared to the previous versions (generations).

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