

## **Introducing Translational Research in Unani medicine: Needs, challenges & the initiatives to be taken**

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### **Abstract:**

Unani medicine is an exquisite system of medicine that promises holistic health care. This system has reigned the health care world for centuries. But, in the present era it is struggling to prove its mettle among other Indian Systems of medicines. So, to rejuvenate Unani therapeutics, new research approaches are must be adopted promptly and one such concept is the adoption of Translational approach of research in Unani medicine. The Translational Tibb promises the much-needed renaissance of the system that will enable it for sharing the due disease burden with other health care systems. But before emphasizing its adoption having a glance at its needs of adoption and the challenges in path was must. Therefore, this study was initiated in the department of *Tashreeh Wa Munafeul Aza*, Ajmal Khan Tibbia College, AMU, Aligarh, so that the guidelines for the successful introduction of Transitional Tibb can be formulated. The details are present below

**Key words:** Translational medicine, Unani medicine, Bench to Bedside, Translational Tibb,

### **Introduction:**

Need is the mother of every invention- this common saying clearly points out one of the most important objectives of conducting research. Since time immemorial, the human being has been conducting research for mainly two main purposes; one is to acquire new knowledge; another to solve his day-to-day problems. The former kind of research is called Basic research through which one tries to know all that is unknown to them just for the enrichment of the basic knowledge; while the latter is named applied research. Through the application of basic knowledge, the solution to our daily problems can be found in Applied research. When kept in two separate boxes basic research and applied research yield no benefit to human life as the basic knowledge without any applicability in real life will be useless while solving daily problems without basic knowledge will be worthless. This interface between lab and clinic was therefore seen as a key area to target. Some have emphasized the seriousness of this gap as the “Valley of Death”<sup>1</sup>. Therefore, to bridge this gap a scientific approach must be introduced so that the maximum and most feasible benefits of research activities can be yielded. There comes the role of adoption of Translational Research which is the dearth of the hour in Unani Medicine. For introducing the concept of translational research, one must get acquainted with the need of its adoption, the challenges to be faced and the due initiatives to be taken promptly for the best outcomes. Keeping an eye on these objectives this work was undertaken as per the following procedure:

**Procedure:**

- 1) **Defining the research problem:** first of all, the clear-cut objectives of the study were planned.
  - a) Reviewing the definition of Translational research and differentiating it from other kinds of research protocols,
  - b) Identifying the dearth of the introduction of translational research in Unani Medicine &
  - c) Setting the major initiatives to be taken in this regard.
- 2) **Exploration of existing literature on the topic:**  
After setting the objectives the existing literature on translational research available online and offline was explored for getting a clue of the latest updates from different health care systems.
- 3) **Designing the road-map of translational medicine in Unani Medicine:**  
After completing the above two tasks in due course of time, this document was prepared for designing the roadmap of translational research in Unani Medicine. This is presented before you with the hope of providing the necessary motivation and guidance for the adoption of translational research in various disciplines of Unani Medicine.

**Translational Medicine (TM):**

In bioscience, translational research is a term often used interchangeably with **translational medicine** or **translational science** or **bench to bedside**. The adjective "translational" refers to the "translation" (the term derives from the Latin for "carrying over") of basic scientific findings in a laboratory setting into potential treatments for disease.<sup>2</sup>

There was a palpable sense of urgency that translational gaps needed to be closed and translational activities to expedite the successful delivery of safe and effective therapies to patients be encouraged. However, there was still little clarity and no real consensus around the defining features of TM and its practical implementation<sup>3</sup>. Mario Sznol, an editorial board member of the Journal of Translational Medicine, suggests TM should be defined as a discipline that encompasses the following key elements<sup>4</sup>:

- Basic science studies which define the biological effects of therapies in humans,
- Human-centered investigations that define the biology of disease and facilitate the development of new or improved therapies.
- Non-human or non-clinical studies aimed at advancing therapies to the clinic or developing principles for the application of therapeutics to human disease.
- Any clinical trial of a therapy, emerging from the above studies, with endpoints including toxicity and/or efficacy.

In addition, in the regulatory arena Translational research may be defined as appropriate product development for clinical use in various stages of investigational clinical trial<sup>4</sup>.

The definition of translational medicine given by the European Society for Translational Medicine is as follows: "Translational Medicine (TM) is an interdisciplinary branch of the biomedical field supported by three main pillars: benchside, bedside, and community. The goal of TM is to combine disciplines, resources, expertise, and techniques within these pillars to promote enhancements in prevention, diagnosis, and therapies"<sup>5</sup>.

On the main website of leading scientific journal Science, TM is defined as follows: Often described as an effort to carry scientific knowledge “from bench to bedside,” translational medicine builds on basic research advances—studies of biological processes using cell cultures, for example, or animal models—and uses them to develop new therapies or medical procedures<sup>6</sup>.

A 2007 Wikipedia entry included some explanatory sentences that appear to be relevant even today: In the case of drug discovery and development, translational medicine typically refers to the “translation” of basic research into real therapies for real patients. The emphasis is on the linkage between the laboratory and the patient’s bedside, without a real disconnect. This is often called the “bench to bedside”<sup>7</sup>.

Although these attempts at a definition are probably the most accurate and concise ones at present, a simpler definition may serve the purpose even better: TM describes the transition of in vitro and experimental animal research to human applications<sup>8</sup>.

### **Need of Translational science in Tibb:**

Different health care systems have started adopting of translational approach for the best outcomes of basic research. There is a dearth of introducing Translational approach in Tibb -e Unani on the following accounts:

#### **a) Scientific needs (enrichment of Tibb e Ilmi):**

Lack of a predetermined working strategy at both the basic and clinical phases of Unani research has led to a widening gap between research and clinical practice. Furthermore, the complex nature of new technologies and the intense need for interdisciplinary collaboration have made translational Tibb mandatory. The translational Tibb will help better in defining the health challenges of the present era with due contributions to both knowledge and practice domains. So, to encourage the much-neglected delivery of therapeutic skills from bench to bedside in academic and commercial fields; translational Tibb becomes compulsory.

#### **b) Commercial needs (san’ati mafaad):**

Commercially, Unani Tibb is facing a number of challenges in its conventional R & D model. The companies are mostly reliant on the knowledge & expertise of academicians and research officers to explore the potential of Tibb in the health care industry. The new drugs attrition rates is high and the gap between drug discovery, drug development, and *nuskha navisi* is extraordinarily large. Translational Tibb may play a significant role in speeding up the commercial yields by generating public demand and promoting sales & distribution for thus developed safe & efficient drugs.

#### **c) Societal/regulatory needs (khidmat-e-khalq):**

The cost, safety, and efficacy of Unani drugs have always been a major concern for regulatory bodies. Unani drug development is subject to intense regulatory hurdles. Translational Tibb, employing new technologies can assure the safety & efficiency of Unani drugs. Newer technologies are to be adopted to improve the drug delivery system to reach disease targets. The integration of basic and clinical research

through translational Tibb will easily meet regulatory requirements and societal expectations.

### **Challenges for Translational Tibb:**

After identifying the needs to adopt the translational approach in Unani Tibb, one needs to see the challenges and obstacles that may come across the path. They can be summarized as under:

- No widely accepted theory of education on Translational Tibb exists to be used as the foundation for designing and implementation of TT studies.
- Absence of national infrastructure for supporting translational Tibb,
- Lack of researchers trained specially for Translational Tibb,
- Lack of funding agencies- where to submit the research projects for monetary help,
- Methodological difficulties- well-designed research protocols,
- Lack Common data integration, management & analysis system for meta-analysis of basic research outcomes
- Inability of control ever-changing environment- a challenge faced by all the health care systems.

### **Initiatives to be taken:**

After identifying the needs and challenges of translational Tibb, the following initiatives can be taken for successful adoption and operation of translational Tibb:

- a) Establishment of Translational Tibb units in Unani institution for the identification of key points of Translational approach in Unani Medicine by committed Unani scholars,
- b) Launching new Education, training, and career development courses in translational Tibb,
- c) Development of the Data integration, management, and analysis system,
- d) Establishment of clinical research informatics
- e) Intra & inter-institutional collaboration

### **Conclusion:**

From the above discussion, it can be concluded that the introduction of Translational approach of research is the dearth of the hour due to scientific, commercial and societal needs. There would be a number of challenges to be faced in the process of it's adoption and implementation but, those obstacles could be overcome by taking suitable initiatives in near future.

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