



# DEVELOPMENT OF HEAD DISEASE MONITORING SYSTEM BY USING SOFT COMPUTING TECHNIQUE

<sup>1</sup>Rashmi A.Charjan, <sup>2</sup>Dr.Ajit Kumar, <sup>3</sup>Dr.G.K.Reddy

<sup>1</sup>Research Scholar, Shri Jagdishprasad Jhabarmal Tibrewala University, Vidya Nagari, Chudela, Churu- Jhunjhunu Road, Jhunjhunu, Rajasthan. [Mob- 9766308150](mailto:Mob-9766308150).

<sup>2</sup>Department Of Computer Science, JTT University, Jhunjhunu, Rajasthan. Mob.No.9466535353.

<sup>3</sup>Associate Profssor & Head, Department of Computer Science, Mahatma Fule Arts, Commerce & Sitaramji Chaudhari Science Mahavidyalaya, Warud. Dist: Amravati 444906, Maharashtra.

<sup>1</sup>rashmicharjan07@gmail.com, <sup>2</sup>[ajit.kaswan@gmail.com](mailto:ajit.kaswan@gmail.com), <sup>3</sup>reddygiridhar4@gmail.com

**Abstract—** Recent age belonging to soft computing. Soft computing and IOTs plays a very important role in health care system. In this article authors want to focus on transformative role of the Internet of Things in healthcare practices, specifically emphasizing its impact on disease of human being management and remote patient monitoring. Internet of Things technologies helps the path for continuous and real-time patient monitoring, utilizing wearable devices and sensors to collect crucial health data. The integration of IoT in chronic disease management empowers patients and healthcare providers alike, fostering proactive interventions and personalized treatment plans. Remote patient engagement is enhanced through telehealth platforms, reducing the need for frequent hospital visits and facilitating seamless communication between patients and healthcare professionals. As technology advances into the era of connected and data-driven healthcare systems, the role of IoT in healthcare is set to expand. Patients from Warud region having health problems have been studied in this article specially related with head. After collecting data of CT scan and X-rays analysis can be done using soft computing.

**Keywords:** AI , Head, Health care ,Internet of Things

## I. INTRODUCTION

The Internet of Things (IoT) is making a significant impact in the field of healthcare, especially in the field of disease management and remote patient monitoring, as well as with far-reaching implications in various industries. This article explores the multifaceted role of IoT in revolutionizing healthcare, improving patient outcomes and transforming traditional healthcare practices especially on abnormality of head in Warud region. Technological innovations are playing a significant role in increasing patient-centric approaches across the landscape as well as reshaping traditional practices. Among these innovations, the Internet of Things (IoT) has emerged as a transformative force, promising groundbreaking solutions to longstanding challenges. This article delves into the profound impact of IoT on disease of Pate management and remote patient monitoring, exploring how interconnected devices and advanced technologies are ushering in a new era of healthcare delivery.

## II. OBJECTIVE

1. Investigate the Utilization of Data Analytics and Predictive Modeling.
2. Examine the Impact on Patient Outcomes.
3. Assess Cost Efficiency and Resource Optimization.
4. Analyze Remote Patient Engagement through Telehealth.
5. Consider Future Trends and Developments

## 6. Examine the Impact of IoT on Patient Monitoring

### III. CHALLENGES AND LIMITATIONS

The traditional healthcare paradigm, while delivering essential services, is not without its challenges and limitations. Understanding these issues is crucial for recognizing the need for transformative technologies like the Internet of Things (IoT) to reshape and enhance the healthcare landscape. Lack of Continuous Monitoring, Fragmented Data and Communication, Limited Patient Empowerment, Inefficiencies in Preventive Care, Episodic Nature of Care, Challenges in Chronic Disease Management, Limited Utilization of Technology.

### IV. METHODOLOGY

Key characteristics of the current healthcare paradigm include, Episodic Care, Limited Continuous Monitoring, One-Size-Fits-All Approach, Hospital-Centric Focus, Reactive Management of Chronic Diseases, Limited Patient Engagement IoT's Pioneering Role in Patient Monitoring, Wearable Devices and Sensors, Continuous and Real-Time Monitoring, Remote Patient Monitoring, Personalized Treatment Plans, Early Detection of Anomalies Patient Empowerment, Integration with Electronic Health Records (EHR).

### V. FIGURES

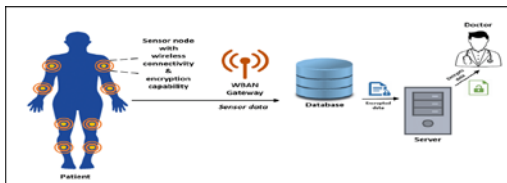


Fig.(a) Architecture for patient monitoring system

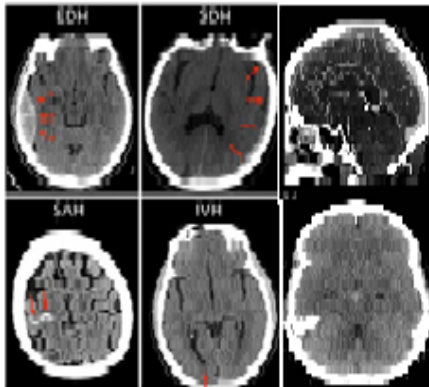


Fig.(b) CT-Scan Report

## VI. WORK OBSERVATION

A thunderclap headache is a very sudden onset headache, and often described as being hit in the head with a cricket bat. Often it is described as the 'explosive' headache and 'worst or first' when severe. Classically it has been seen as a symptom of subarachnoid hemorrhage, however numerous other conditions can present in this fashion. These include:

Aneurysmal subarachnoid hemorrhage (SAH), Perimesencephalic hemorrhage, Parenchymal intracranial hemorrhage (ICH), Cerebral venous thrombosis Perimesencephalic Subarachnoid Hemorrhage (PMSAH) is a Distinct Pattern Of Non-Aneurysmal Subarachnoid Hemorrhage (SAH) Centered On The Basal Cisterns Around The Midbrain With An Excellent Prognosis. Perimesencephalic Subarachnoid Hemorrhage Is Rare With An Incidence Of 0.4 In 100 In Adults PMSAH Represents 6-10% Of All Subarachnoid Hemorrhages And 30% Of All Non-Aneurysmal SAH. As Per Subarachnoid Hemorrhage, 90% Of Cases Of Perimesencephalic Subarachnoid Hemorrhage Have A Normal Cerebral Angiogram And The Source Of Bleeding Is Not Identified; The Cause Is Thought To Be A Venous Bleed. This Is Referred To As **Non-Aneurysmal Perimesencephalic SAH**. The Other 20% Of Cases Are Due To a Vertebrobasilar Aneurysm And The Prognosis Is Worse. Rare Causes Include Arteriovenous Malformation, Dural Arteriovenous Fistula, Trauma And Vascular Tumors.

In proposed research study, authors studied on abnormality of head in Warud region. Patients with a mean age of 51 and 60 percent of whom were male were assessed at two weeks and three, six and 12 months post-injury and found that patients in the SDH, SAH groups failed to fully recover at 12 months post-injury and Effects ranged from mild to more severe disorders. It is found that approximately 6 percent of people develop intraventricular hemorrhage (IVH) in head-turning, sports, scooter and automobile accidents. Also 6 percent have an epidural hematoma (EDH) in which blood accumulates in the membrane covering the brain and skull, often seen in sports injuries. The most common patterns of injury, affecting more than half of CT-positive patients, were a combination of subarachnoid hemorrhage (SAH), subdural

hematoma (SDH), which can result from injuries such as standing and falling.

This level is seen to affect many areas of functioning such as social, leisure and employment activities up to 12 months after the injury. Patients with the EDH phenotype were then shown to perform significantly better at the five month assessment. The research found that only 33 percent of people receive follow-up that includes simple interventions such as providing educational materials at discharge. This suggests that increased use of CT may expose patients to radiation and potentially increase the risk of cancer.

#### VII. FUTURE ENHANCEMENT

The role of the Internet of Things (IoT) in disease of Pate management and remote patient monitoring continues to evolve and several future enhancements are anticipated. These advancements aim to further improve healthcare outcomes, enhance patient experiences and streamline healthcare processes. Here are some potential future enhancements in the role of IoT in disease and remote patient monitoring:

Integration of Artificial Intelligence (AI). Predictive and Prescriptive Analytics. Edge Computing for Real-Time Processing. Enhanced Security and Privacy Measures. Wearable Device Innovations. Block chain for Data Integrity. Patient-Generated Health Data (PGHD) Integration. Enhanced User Interfaces and User Experience (UI/UX).

#### VIII. CONCLUSION

From above study it concludes that this exploration of the transformative role of the soft computing and Internet of Things (IoT) in healthcare underscores the profound impact. It is found that approximately 9 percent of people develop intraventricular hemorrhage (IVH) or petechial hemorrhage in head-turning, sports, two wheelers and four wheelers accidents. Also 7 percent have an epidural hematoma (EDH) in which blood accumulates in the membrane covering the brain and skull, often seen in accidental injuries and it has on revolutionizing patient care, with a particular emphasis on disease management and remote patient monitoring. This system is user friendly. It is easily accessible, low cost and prediction is more accurate. The integration of IoT technologies has ushered in a new era characterized by continuous and real-time monitoring, providing healthcare

professionals with unprecedented insights into patients' health statuses.

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