IOWN INTEGRAL

NTT R&D FORUM 2024

RESEARCH

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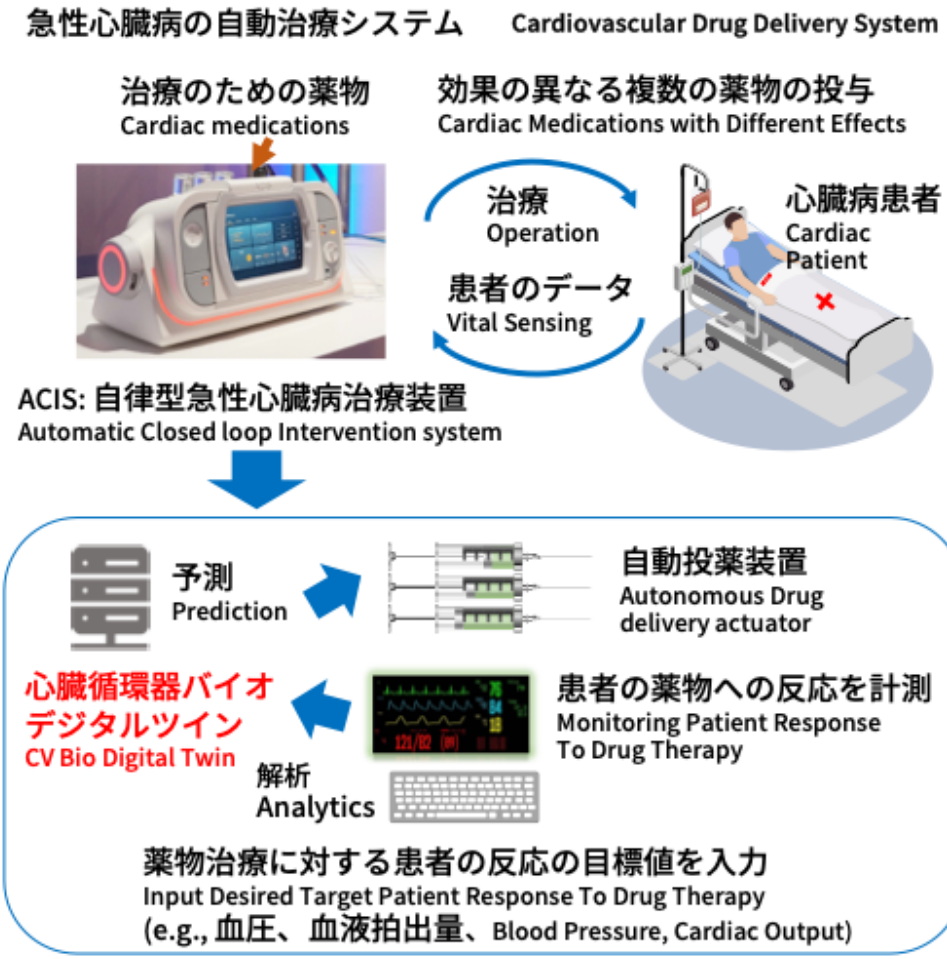
ACIS (Autonomous Closed-Loop Intervention System)

Enables optimal treatment through automated drug administration using a Cardiovascular Bio Digital Twin for patients suffering acute heart failure

Well-being, Human Capital Management



///Technical Issue

It's difficult to accurately predict the condition of individual patients in nearly real time, and the intervals of drug treatment can be several hours long.

///Research Goal

To save lives by providing support to on-site doctors and autonomous drug therapy in environments without heart treatment specialists.

---Technology

NTT's proprietary prediction algorithm is based on Cardiovascular Bio Digital Twin data and the human body's response to drug therapy.

---Novelty

ACIS can reduce treatment intervals to around 10 or 20 min from several hours with real-time simulation of CV Bio Digital Twin. Since the hemodynamical model is based on physical law, NTT's CV Bio Digital Twin can make a reliable prediction based on analytical simulation instead of typical AI-based experimental data.

---Applicable Business

- Medical
- Autonomous therapeutics for acute myocardial infarction, also known as heart attack, and acute heart failure
- Target: 2035

Exhibitors=NTT Research, Inc. Related URL= NTT Research Upgrade 2024 Presentation

Contact URL Outside Partner= National Cerebral and Cardiovascular Center