医未医疗

RealNow

AI powered Stroke Imaging Solutions

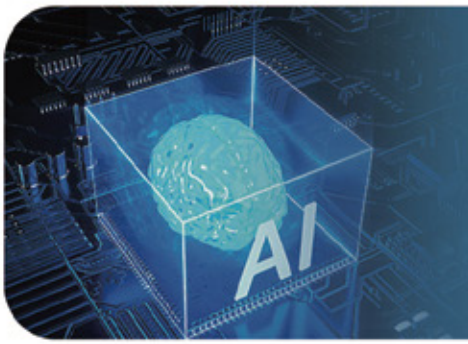
Shenzhen YIWEI Medical Technology Co., Ltd

COMPANY PROFILE

Shenzhen YIWEI Medical Technology Co., Ltd is the leader of precision medicine in brain diseases in China, and the first AI enterprise concentrating on early-staged brain diseases screening and diagnosis. The core products of YIWEI focuses on accurate screening, diagnosis and recovery of brain diseases such as Alzheimer's disease, stroke, children mental retardation, covering the entire work flow of brain disease management.

In the lead of the industry,YIWEI products have gained multiple certificates from NMPA, CE, and FDA in different modules for various brain diseases. Especially on the aspects of Alzheimer's diseases diagnosis, we completed the first multi-centered clinical trial globally in AI-assisted diagnosis of Alzheimer's disease for NMPA Class III certificate application. Furthermore, in 2023, we approved for the first Class III certificate of AI-assisted diagnosis for AD. YIWEI has been granted the national high-tech enterprise qualification and has obtained more than 70 patents of invention and software copyrights. Our products have been applied in more than 200 top tertiary hospitals in China, and have started strategic cooperation with numerous head enterprises, such as Health-100, Beilu Pharmaceutical Co., Ltd. Gem Flower Healthcare Corporation of China National Petroleum Corporation, and Yingkang-Life of Haier Corporation, etc. It took the lead to build a platform covering the entire process including precision diagnosis, brain health care, and digitalized recovery, setting up a closed-loop business model that is the most clinically relevant and grounded in China.





The only brain science AI company covering all aspects of central nervous system diseases

Industrial leadership in Alzheimer's disease, stroke and white matter lesion diagnosis



Largest standard brain images database of Chinese population globally

The only certified company in both cerebral vascular diseases and CNS degenerated diseases, gaining 8 NMPA certificates, 2 CE certificates and 1 FDA verification



PRODUCT INTRODUCTION

RealNow

An AI-assisted diagnosis platform for acute stroke that can acquire radiological indices for stroke treatment, providing quantitative results and image analysis for reperfusion treatment in acute phase, assisting physicians to make a quick decision in clinical scenes.

REALNOW

Comprehensive

Covering all needed imaging data analysis for acute stroke, providing solutions and assistance in disease management

Accurate

Multi-centered clinical trial has shown that diagnostic data results agree with those of senior doctors by the accuracy more than 95%

Rapid

Finishing image analysis within 5 minutes, quickly providing supportive diagnostic results and saving valuable time in acute stroke treatment

Intelligent

Trained by over tens of thousands of clinical data, the AI algorithm is more intelligent in capturing subtle lesions compared to senior specialists

Objective

The AI algorithm is able to exclude subjectivity of different doctors in diagnosis process, presenting objective and consistent standard quantitative indicators



Meet the needs of making medical decisions in acute stroke treatment

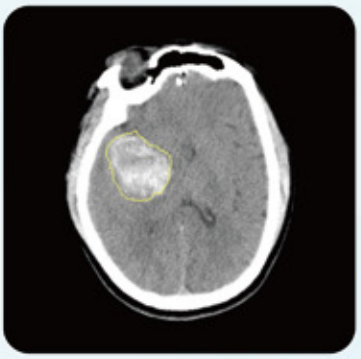
Covering all radiological assessments in acute stroke treatment, providing

Treatment Decision Pathway

NCCT

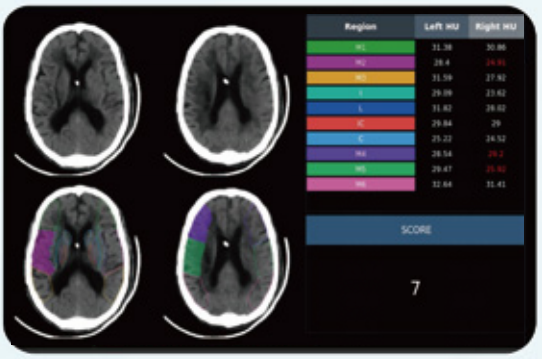
ICH Module

- Intracranial hemorrhage localization
- Bleeding volume calculation



ASPECTS Module

- Cerebral infarction loci highlight
- Automatic ASPECTS scaling



THERAPEUTIC STRATEGY DECISION

CTA

3D reconstruction of cerviocerebral vasculature

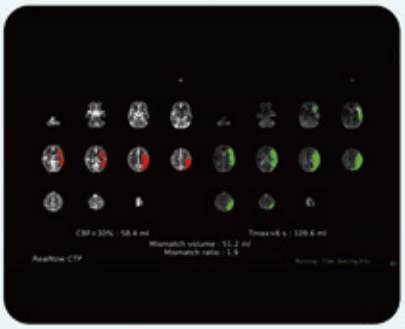
LVO detection and quantification
Aneurysm, stenosis and plaque analysis

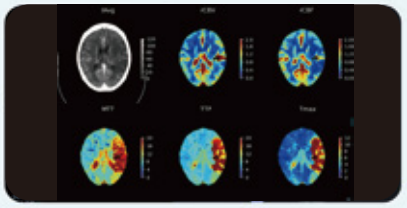


CTP/MRP

Infarction core and ischemic penumbra assessment

Risk-benefit assessment of mechanical thrombectomy





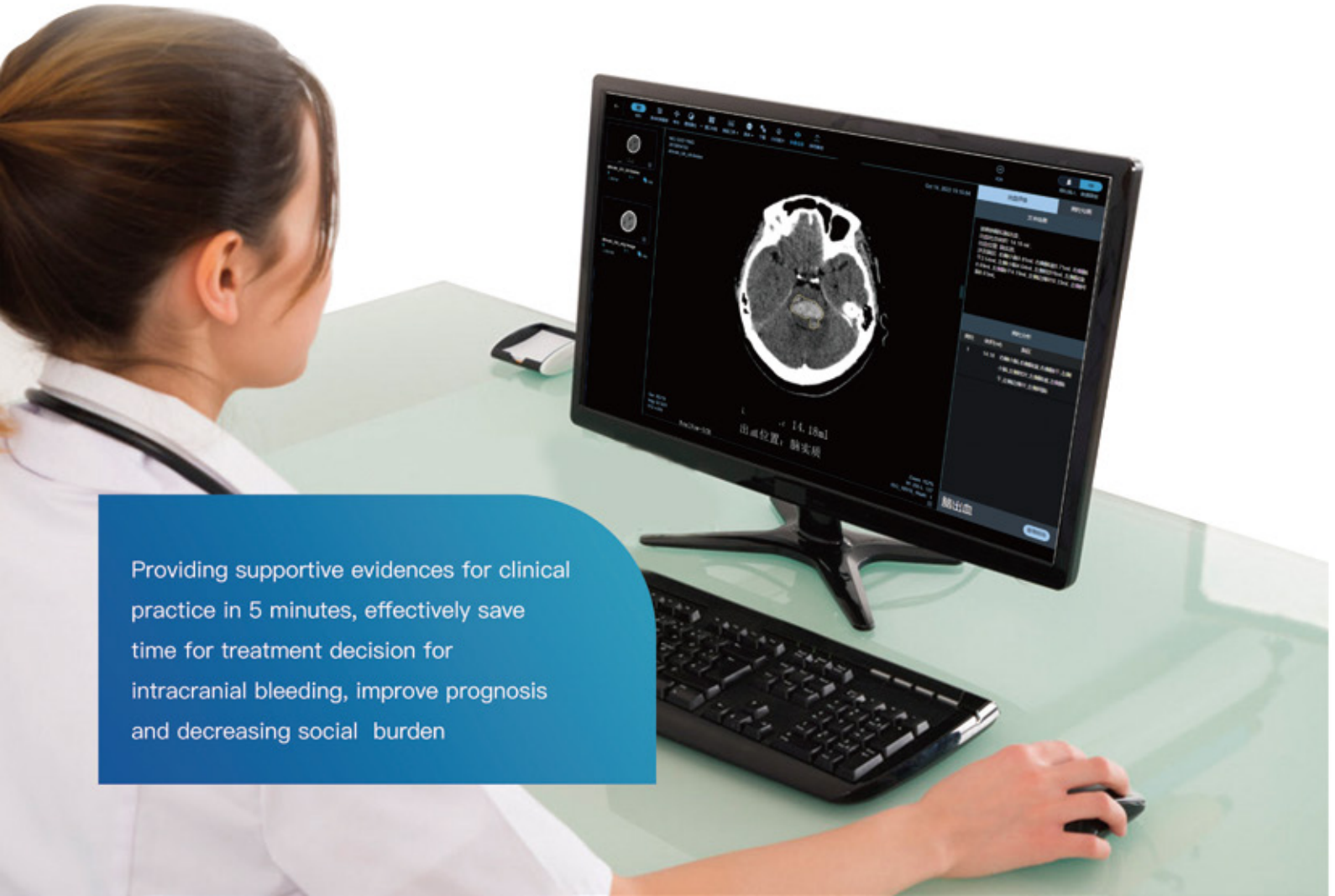
NCCT Assistance

ICH Module

Quick analysis of NCCT images to identify and localize intracranial hemorrhage, and calculate bleeding volume, assisting physicians in making medical decisions

Treatment options for acute hemorrhagic stroke automatic identification and assessment of bleeding foci

- Analysis of bleeding sites and types of bleeding
- Automatic and precise outline of the hematoma boundary
- Automatic volume measurement of accurate hematomae
- Automatic analysis of midline shifting



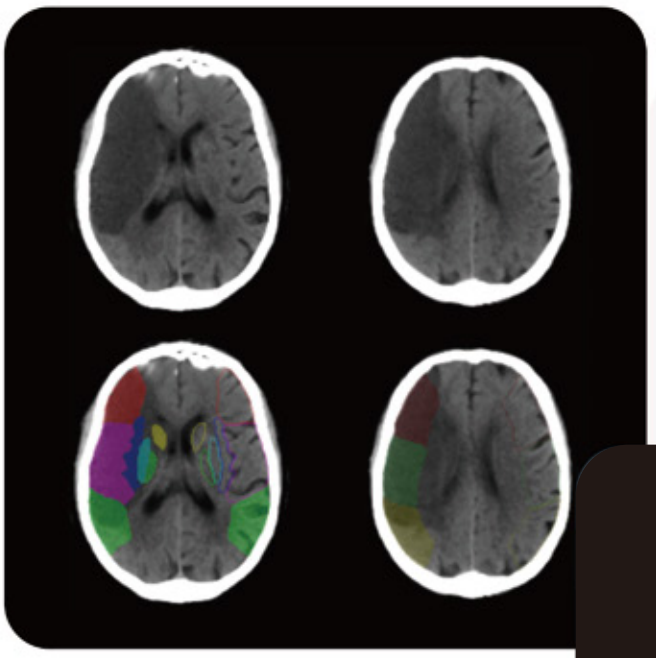
Providing supportive evidences for clinical practice in 5 minutes, effectively save time for treatment decision for intracranial bleeding, improve prognosis and decreasing social burden

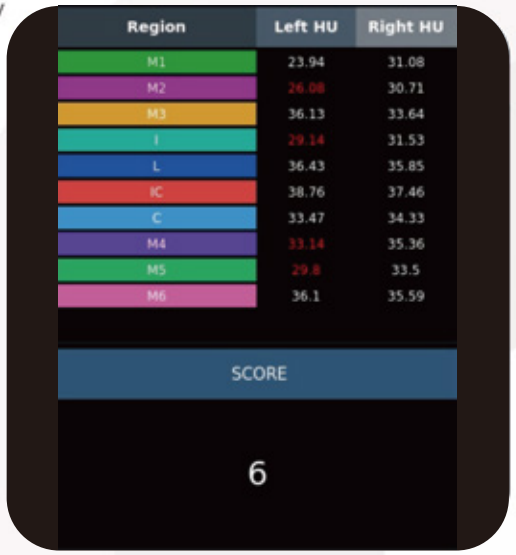
RADIOLOGICAL DIAGNOSIS

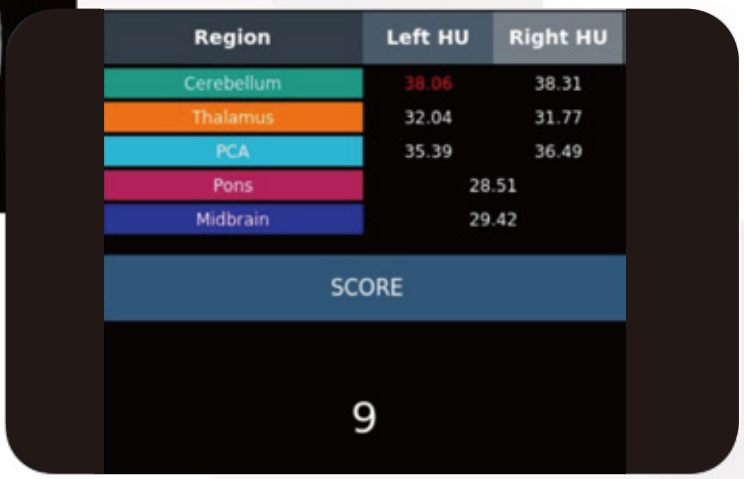
ASPECTS Module

Treatment options for acute ischemic stroke
ischemic foci identification and severity assessment by ASPECTS scaling

AI algorithm automatically calculates ASPECTS scores of anterior and posterior circulation, solving the practical problems of long time consuming, low consistency, providing supportive evidences for thrombolytic therapy and other ischemic stroke treatments







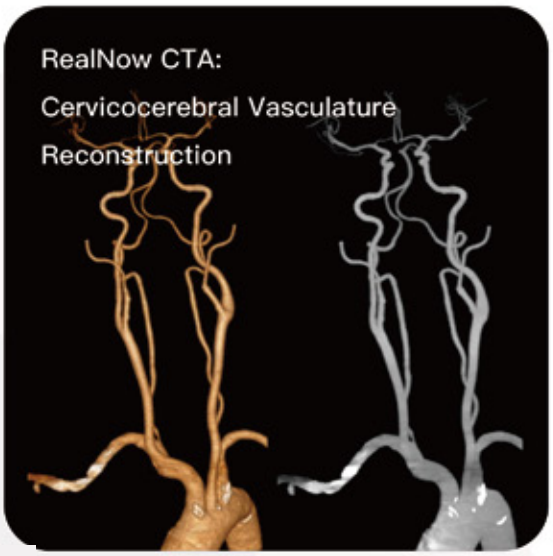
CTA Assisstance

Automatic analysis of CTA images, providing key evidences for mechanical thrombectomy

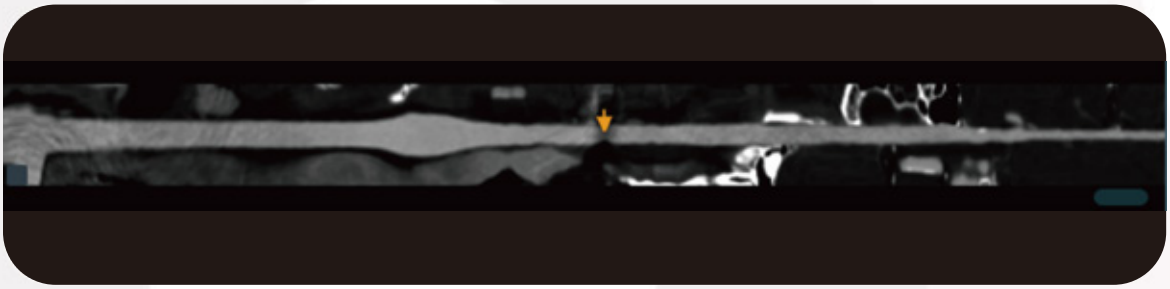
Mechanical thrombectomy assistance within 6 hours
vascular stenosis assessment and interventionai pathway planning

Via AI analysis of CTA images:

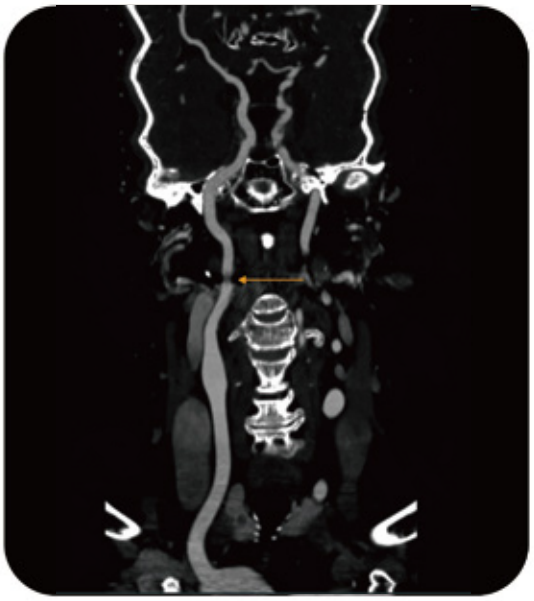
- Automatic reconstruction of cervicocerebral vasculature
- Labelization of vascular stenosis loci
- Assessment of vascular stenosis
- Automatic vascular segmentation
- Identification of arterial atheromatous plaques
- Automatic detection of aneurysm
- Vascular midline edit



RealNow CTA: straightening of blood vessels



RealNow CTA: Vascular Stenosis Analysis



RealNow CTA: Aneurysm Detection





CTP/MRP Assisstance

Mechnical Thrombectomy after 6 hours of onset and Wake-up Stroke

——Automatic mismatch value calculation

- Automatic multimodal perfusion analysis
- Automatic infarct core and ischemic penumbra highlight and mismatch value calculation, providing objective and quantitative evidences
- Comparison of infarct core and ischemic penumbra by different thresholds, fulfilling different needs in both clinical and academic aspects
- Cerebral vasculature reconstruction based on CTP data, fulfilling clinical needs of intervention treatments
- Automatic CSF outline and head movement calibration, providing more accurate quantitative data
- Covering both CTP and DWI-PWI perfusion analysis

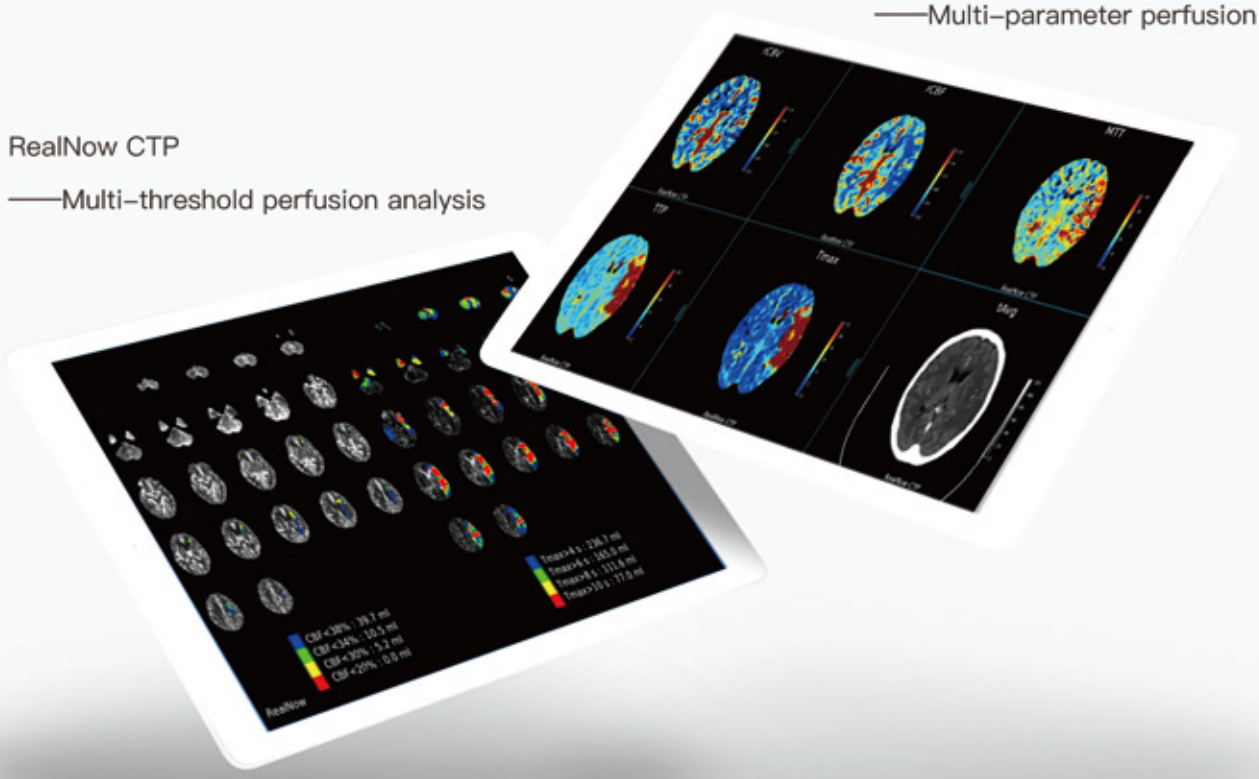


RealNow

——Multi-parameter perfusion analysis

RealNow CTP

——Multi-threshold perfusion analysis



RealNow

——Vasculature reconstruction based on CTP data

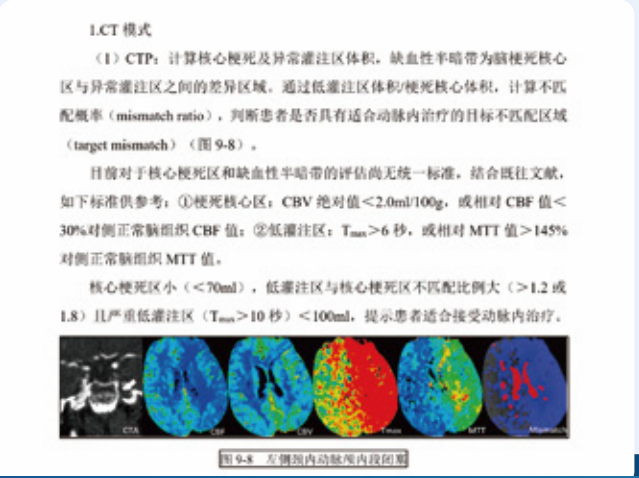
RealNow MRP

——Automatic mismatch area analysis



GUIDELINE ACCREDITATION

AI powered stroke diagnosis softwares have been accredited by clinical guidelines for their safety and reliability of obtaining quantitative radiological indication.



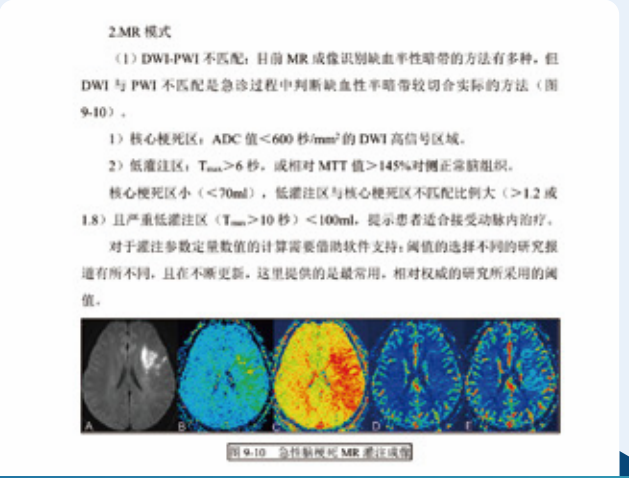
1.CT 模式

（1）CTP：计算核心梗死及异常灌注区体积。缺血性半暗带为脑梗死核心区与异常灌注区之间的差异区域。通过低灌注区体积/梗死核心体积，计算不匹配概率（mismatch ratio），判断患者是否具有适合动脉内治疗的目标不匹配区域（target mismatch）（图 9-8）。

目前对于核心梗死区和缺血性半暗带的评估尚无统一标准，结合既往文献，如下标准供参考：①梗死核心区：CBV 绝对值<2.0ml/100g，或相对 CBF 值<30%对侧正常脑组织 CBF 值；②低灌注区：T_{max}>6 秒，或相对 MTT 值>145%对侧正常脑组织 MTT 值。

核心梗死区小（<70ml），低灌注区与核心梗死区不匹配比例大（>1.2 或 1.8）且严重低灌注区（T_{max}>10 秒）<100ml，提示患者适合接受动脉内治疗。

图 9-8 左侧颈内动脉闭内段闭塞



2.MR 模式

（1）DWI-PWI 不匹配：目前 MR 成像识别缺血半性暗带的方法有多种，但 DWI 与 PWI 不匹配是急诊过程中判断缺血性半暗带较切合实际的方法（图 9-10）。

1）核心梗死区：ADC 值<600 秒/mm^2 的 DWI 高信号区域。

2）低灌注区：T_{max}>6 秒，或相对 MTT 值>145%对侧正常脑组织。

核心梗死区小（<70ml），低灌注区与核心梗死区不匹配比例大（>1.2 或 1.8）且严重低灌注区（T_{max}>10 秒）<100ml，提示患者适合接受动脉内治疗。

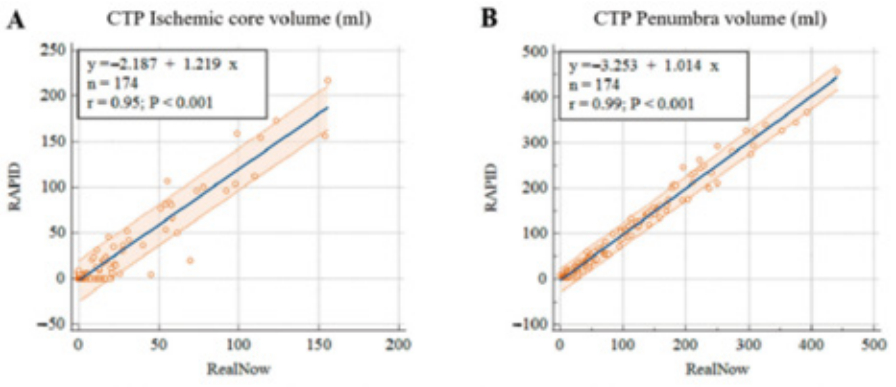
对于灌注参数定量数值的计算需要借助软件支持；阈值的选择不同的研究报道有所不同，且在不断更新。这里提供的是最常用、相对权威的研究所采用的阈值。

图 9-10 急性脑梗死 MR 灌注成像

Guideline of Prevention and Treatment of Stoke of China. 2021

PUBLICATION

A high degree of concordance between RealNow and RAPID, which was published in the journal cells.



Comparision RealNow and RAPID for Perfusion Imaging

PRODUCT QUALIFICATION



COOPERATIVE HOSPITALS

北京协和医院
PEKING UNION MEDICAL COLLEGE HOSPITAL

首都医科大学宣武医院
Xuanwu Hospital Capital Medical University

中山大學孫逸仙紀念醫院
SUN YAT-SEN MEMORIAL HOSPITAL,SUN YAT-SEN UNIVERSITY

上海市同济医院
同济大学附属同济医院
TONGJI HOSPITAL OF TONGJI UNIVERSITY

中山大學 附属第一医院
The First Affiliated Hospital, Sun Yat-sen University

北京大学第六医院
Peking University Sixth Hospital

广州医科大学附属第二医院
第二临床学院

第二附属医院（西北医院）

陆军军医大学西南医院
THE SOUTHWEST HOSPITAL OF AMU

郑州大学附属郑州中心医院
郑州市中心医院
ZHENGZHOU CENTRAL HOSPITAL

首都医科大学附属北京天坛医院
BEIJING TIANTAN HOSPITAL, CAPITAL MEDICAL UNIVERSITY

华中科技大学同济医学院附属协和医院

山西医科大学第一医院
FIRST HOSPITAL OF SHANXI MEDICAL UNIVERSITY

广州市妇女儿童医疗中心
GUANGZHOU WOMEN AND CHILDREN'S MEDICAL CENTER
国家儿童区域医疗中心(中南)
NATIONAL CHILDREN'S MEDICAL CENTER FOR SOUTH CENTRAL REGION

河北医科大学第一医院
THE FIRST HOSPITAL OF HEBEI MEDICAL UNIVERSITY

郑州大学第五附属医院
第五临床学院
The Fifth Affiliated Hospital of Zhengzhou University

成都中医药大学附属医院
Hospital of Chengdu University of TCM
四川省中医医院
TCM Hospital of Sichuan Province

贵州省人民医院
GUIZHOU PROVINCIAL PEOPLE'S HOSPITAL

南方医科大学深圳医院
Southern medical university shenzhen hospital

南宁市第一人民医院
The First People's Hospital of Nanning
广西医科大学第五附属医院

精准 · 高效 · 创新 · 合作

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