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rt-PA

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Advances in mechanism of intracranial hemorrhage and transformation after intravenous thrombolysis treatment with rt-PA

HE Zi-long MA Guo-zhong CUI Fang. Department of Neurology Hainan Branch PLA General Hospital Sanya 572031 China

Key words Ischemic stroke rt-PA Intravenous thrombolysis Intracranial hemorrhage transformation Reviews

(Recombinant Tissue Plasminogen Activator rt-PA)

(NINDS)

(ECASS) 2014

rt-PA

rt-PA

rt-PA

1

22 h~7 d [1]

rt-PA

5 min NINDS

rt-PA

24 h 80%

12 h

24 h

[2]

NINDS ECASS

ECASS

(Hemorrhagic Infarcts HI)

(Parenchymal Hematomas PH)

HI PH

HI PH [3-4]

(Symptomatic Intracerebral Hemorrhage sICH)

(Non-symptomatic Hemorrhage ICH) sICH

NINDS ECASS

(SITS-MOST) [3-6]

ECASS

(7 d)

[1 7]

( )

27.5% [7]

572031

— (Blood-brain Barrier

BBB) rt-PA - α
rt-PA
[14-15]

BBB
HI

PH

[4]
( )
PH CT

[8-9]

sICH

(Cerebral Amyloid Angiopathy CAA)
CAA rt-PA
70%
22% [10-11] CAA

(Cerebral Microbleeds CMB)
CAA
rt-PA
[16-17]

Meta CMB
sICH (RR) 1.90(95% CI=0.92~3.93
P=0.08) [4] Kimura [12] CMB
CMB 24 h
CMB sICH

Mehta [13]

rt-PA

2

BBB
BBB

BBB

SITS GRAPSPS SEDAN HAT
7 HINSS

C (C-statistic)
C 0.62~0.70

[18-20]

3 rt-PA

HI PH
ECASS-I
rt-PA 36 h 30%

13%

rt-PA rt-PA

rt-PA

[21] rt-PA

(1)rt-PA

rt-PA

rt-PA

rt-PA

PH [2]

(2)rt-PA rt-PA

rt-PA PH

rt-PA rt-PA

[22] rt-PA

BBB

rt-PA

(LDL

Receptor-related Protein LRP)

C(Derived Growth Factor C) N- -d-

(N-methyl-d-aspartate NMDA)NR1

rt-PA

[23-27] rt-PA

BBB

BBB

[28] rt-PA

(Matrix Metalloproteinase MMP) MMP-3

MMP-9 MMP

BBB [14 26 28]

BBB

rt-PA

rt-PA

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