

Red blood cell distribution width is a potential predictor for ischemic stroke in hemodialysis patients

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Objectives:

To study the relation between red blood cell distribution width (RDW) and stroke in patients undergoing hemodialysis.

Methods:

442 adult patients undergoing hemodialysis were included. The mean RDW was obtained from each result and the results from active bleeding to 4 months after bleeding stops were excluded. Clinical diagnoses of new-onset stroke were made based on the CT or MR examination.

Results:

Within a median 50 months of follow-up, 62 (14.0 %) had new-onset stroke in the 442 hemodialysis patients, including 41 (9.3%) with cerebral infarction and 21 (4.8%) with cerebral hemorrhage. The RDW values in patients with stroke and cerebral infarction were higher than those in patients without stroke [16.5(15.5,18.0) vs 16.0(15.0,17.0), $P=0.003$] and [16.5(15.5,18.0) and 16.0(15.0,17.0), $P=0.011$]. However, the RDW values in patients with cerebral hemorrhage were comparable to those in patient without stroke. In a multivariate Cox proportional hazard model, after adjusted by multivariable, the highest quartile of RDW was associated with new-onset cerebral infarction compared with the lowest quartile RDW with a HR of 3.55 (95% confidence interval 1.33-9.51).

Conclusions:

The increased RDW was an independent risk factor of cerebral infarction in patients undergoing hemodialysis.

Keywords :

red cell distribution width; hemodialysis; risk factor; cerebral infarction; cerebral hemorrhage

