



## CROSS TALK BETWEEN CEREBRAL ACTIVITY AND SYSTEMIC METHABOLISM

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### Background and aims

During a severe brain accidents like massive haemorrhagic event or severe cerebral trauma, occur numerous biochemical and hormonal changes. The cerebral neuroendocrine storming, the impaired tissutal perfusion due to the vasoplegia, the reduction in oxygen delivery, the microcirculatory changes, involve in mitochondrial dysfunction and reduction in systemic metabolism. Our aim is to evaluate the 'metabolic stupor' during the acute phase of cerebral severe events and put it into relation to the degree of GCS.

### Methods

We conducted observational pilot study: 21 trauma patients admitted in ICU were enrolled: 10 with severe brain damage and 11 with abdominal/thoracic trauma.

Calorimetric assessment, ISS and GCS evaluation were detected within the first 48 hours and after the 3<sup>rd</sup> day of admission

### Results

Group A MEDIAN at the admission: gcs 5,4 , REE 1120, ISS > 50, age 56,8; 5M, 5F

Group B median at the admission gcs 9,9, median ree 1700, ISS<50, age 49,8 , 6M, 4 F

REE of all patients is lower in group A with severe brain injury than in the Group B with a severe abdominal injury.

The REE values increase proportionally to the gcs value after the first 48-72 H

### Conclusions

The lower the GCS is, the lower the basal metabolic rate.(Fig2)

The basal metabolism follows proportionally the severity of cerebral damage

Calorimetry evaluation seems to be fundamental to avoid over or under nutritional treatment.

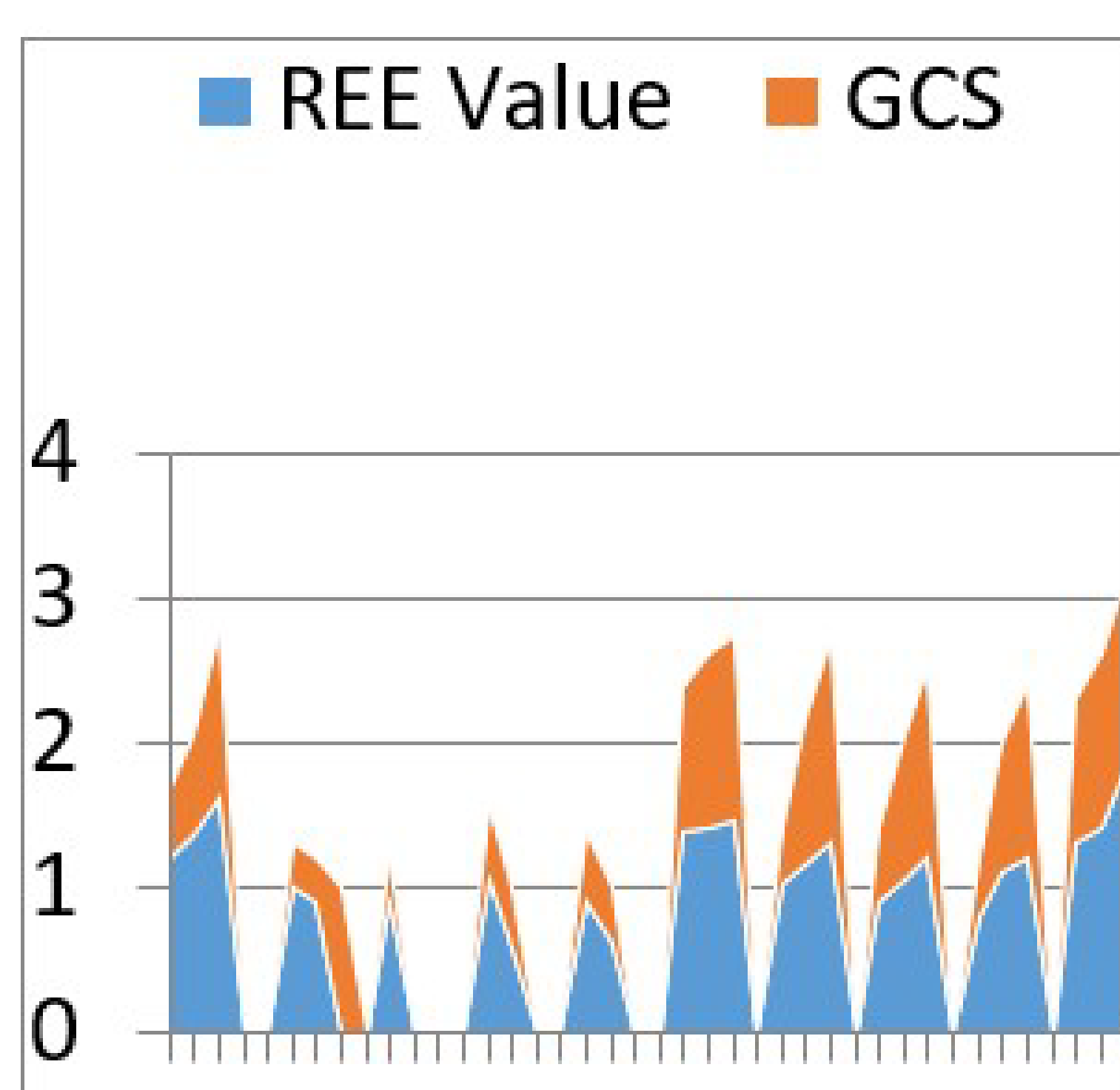


FIG 1 REE value follows proportionally GCS

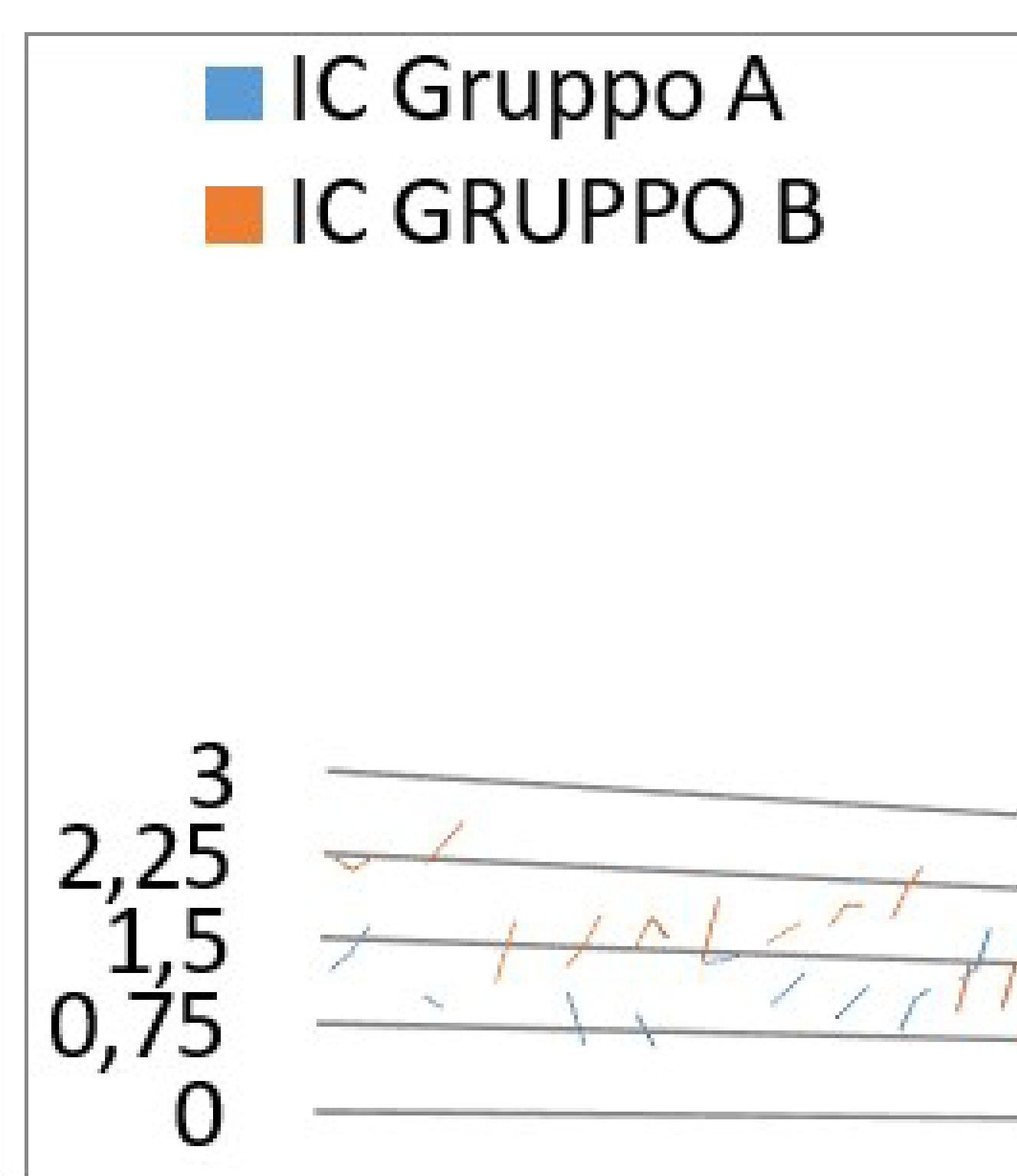


FIG 2 IC in group A and un B

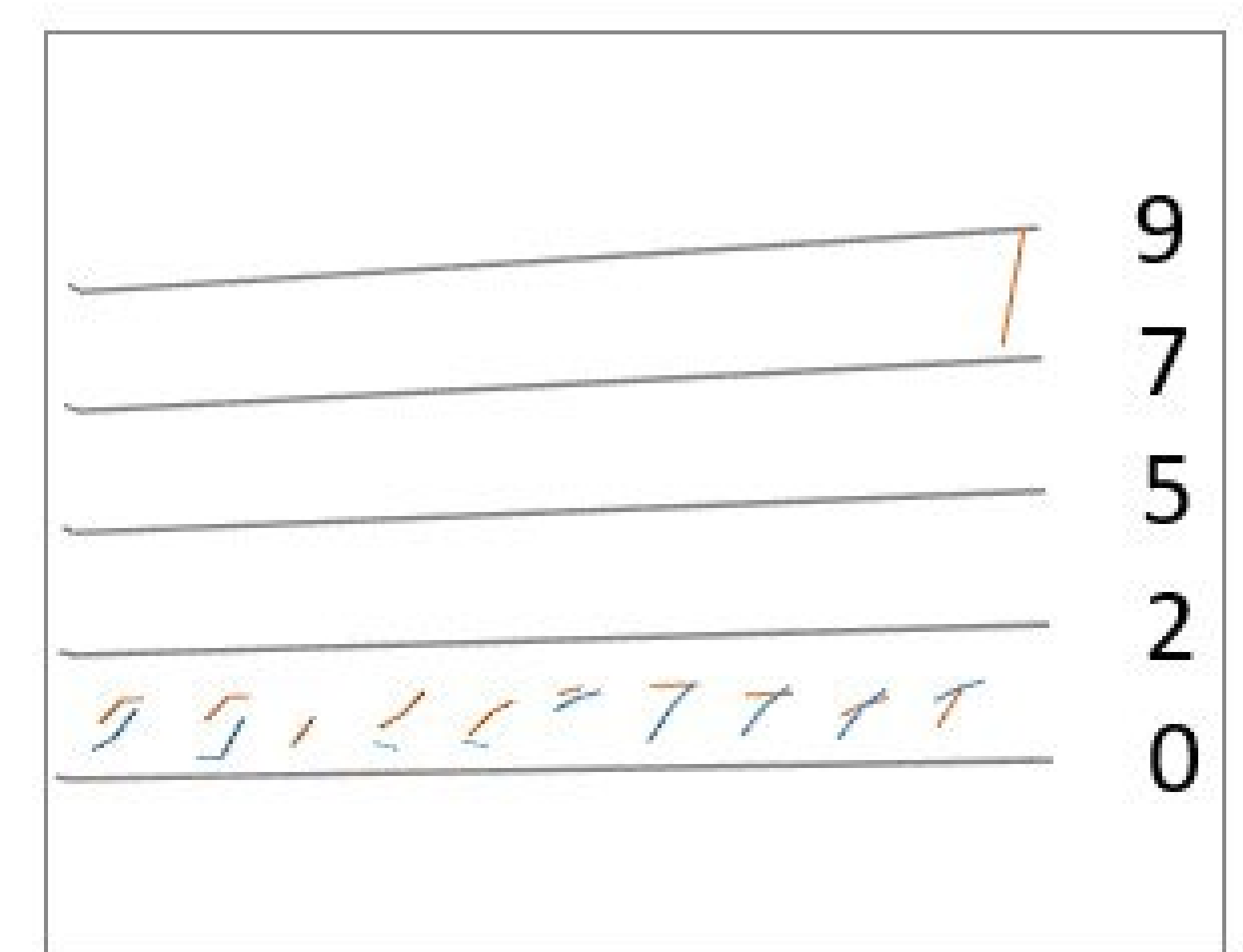


Fig 3 GCS group A e Group B

