

Category : **Respiratory: mechanical ventilation**

**A105 - Effect of age on mortality in patients undergoing veno-venous ecmo: a systematic review and meta-analysis.**

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### **Introduction:**

Although use of veno-venous extracorporeal membrane oxygenation (VV-ECMO) for ARDS is increasing worldwide, criteria for eligibility are not clear and use of ECMO for older patients is still debated. The primary objective of this meta-analysis and meta-regression was to determine whether mortality on VV-ECMO is affected by patient's age.

### **Methods:**

we searched Pubmed for studies published between 2015 and 2019, using the keyword 'ECMO'. Only RCTs and observational studies on VV-ECMO with >10 patients were included. Secondary analyses of large databases were excluded to avoid data duplication. We excluded records rated as 'poor' according to the NIH study quality assessment tools. Outcomes were ICU, hospital and 3-months mortality. The relationship between mean age and mortality was investigated with meta-regression [1] and results reported as regression coefficient (b) with 95% confidence interval.

### **Results:**

we included 63 studies (22 rated as 'good', 41 'fair'). ICU-mortality was available in 22 studies, hospital-mortality in 45 studies, and 3-months mortality in 6 studies. We found a strong association between mean age and ICU mortality (b=0.021, 95%CI: 0.011-0.031, p<0.001) (Figure). The sensitivity analysis (considering only 'good' studies) showed the same b coefficient but not a statistically significant relationship (b=0.021, p=0.124). Similar association was found for hospital-mortality (b=0.014, 95%CI: 0.008-0.020, p<0.001), confirmed by the sensitivity analysis (b=0.020, 95%CI: 0.006 – 0.033, p=0.008). There was a positive association (although not statistically significant b=0.015, p=0.204) between mean age and 3-months mortality; 'good' rated studies were too few to perform sensitivity analysis.

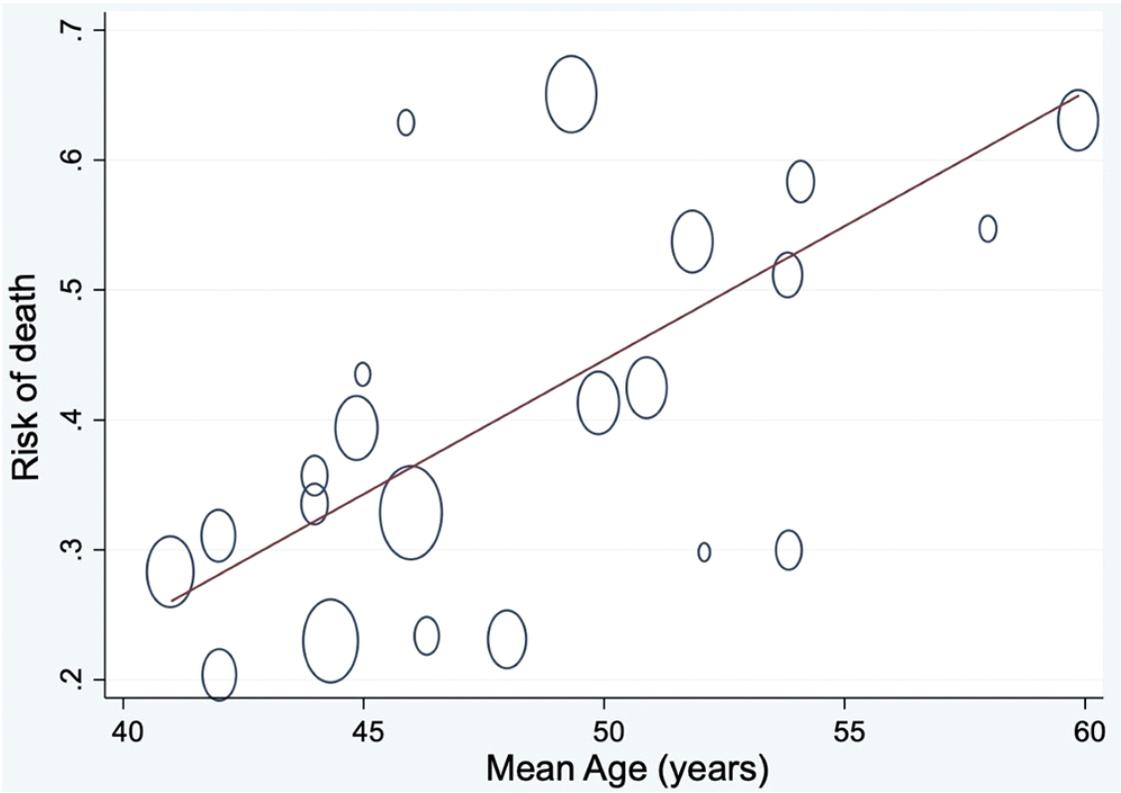
### **Conclusion:**

our meta-regression shows that mortality on ECMO is independently influenced by the age of the patient. Further analyses are needed to determine whether an age cut-off exists, above which mortality increases unacceptably.

### **References:**

[1] DerSimonian et al. *Controlled Clinical Trials* 7:177-88, 1986.

**Image :**



*Association between mean age and ICU - mortality*