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Title: Effects of socioeconomic status on severity, treatment and outcomes in patients with pleural infection

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Body: Background: Whether and how socioeconomic status (SES) influences severity, treatment and outcomes in patients with pleural infection remains unknown. Methods: We analyzed 24,864 adults with pleural infection, treated between 1997 and 2008, from Taiwan's National Health Insurance Research Database. The SES, measured by monthly incomes, was categorized into four levels: no, low, middle and high incomes. Primary outcome was 30-day mortality. Secondary outcomes were development of new organ failure (as a measure of disease severity) and surgery for pleural infection. The effect of SES on outcomes was assessed using sequential multivariable logistic regression models. Results: The risks of new organ failure were 34%, 30%, and 12% higher in patients with no (OR 1.34, 95% CI 1.20-1.49), low (OR 1.30, 95% CI 1.19-1.42) and middle incomes (OR 1.12, 95% CI 1.03-1.21), respectively, than in those with high income after adjusting for baseline covariates. Surgery was 23% and 22% less likely to be performed in patients with no (OR 0.77, 95% CI 0.65-0.91) and low incomes (OR 0.78, 95% CI 0.66-0.91) than in those with high income after adjusting for the baseline covariates, disease severity and uses of life-supports. The 30-day mortality was 17.1%, 15.5%, 14.8% and 10.4% in patients with no, low, middle and high incomes, respectively (p for trend <0.001). The gap in mortality remained after adjusting for the baseline covariates, but was attenuated and became insignificant after further adjusting for the severity. Conclusions: Lower SES patients with pleural infection are more severe and less likely to undergo surgery. Their higher mortality is largely explained by higher severity of illness.