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Enteral immunonutrition in gastric cancer

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Gastric cancer (GC), which is a leading contributor to cancer death worldwide, seriously impairs the health basis and decreases the quality of life of patients.[1] Surgery has been the mainstay to curatively treat the GC patients.[2] However, most importantly, various serious postoperative complications (i.e. malnutrition, immune suppression, *etc.*) will deeply obstacle the prognosis of these given patients.

Sparse evidences published reveal a beneficial of facilitating recovery of patients undergoing the gastrectomy from surgery in enteral immunonutrition (EIN) regime group,[3,4] but there are some studies support standard enteral nutrition (SEN) to be as the nutrition support for patients undergoing surgery for GC.[2] So which nutrition support regimes can be selected to be as the preferred option for GC patients undergoing gastrectomy is still an issue. To address this controversial question, we previously performed a systematic review and meta-analysis of randomized controlled trials (RCTs) investigating comparative effectiveness between EIN and SEN in this specified patients.[5] Our pooled findings on the basis of limited observed events and included studies suggested that clinical outcomes including surgical site infections (SSIs) and other infectious complications (OICs) cannot benefit from EIN regime relative to SEN design.

It is well known that systematic review and meta-analysis of RCTs is a statistical technique to aggregate the data from homogeneous studies and increase the statistical power and precision of the estimated intervention effect through accumulating the observed events and target sample size eventually. It is must note that, however, if the number of accrued patients is smaller than the optimal information size required, meta-analyses include

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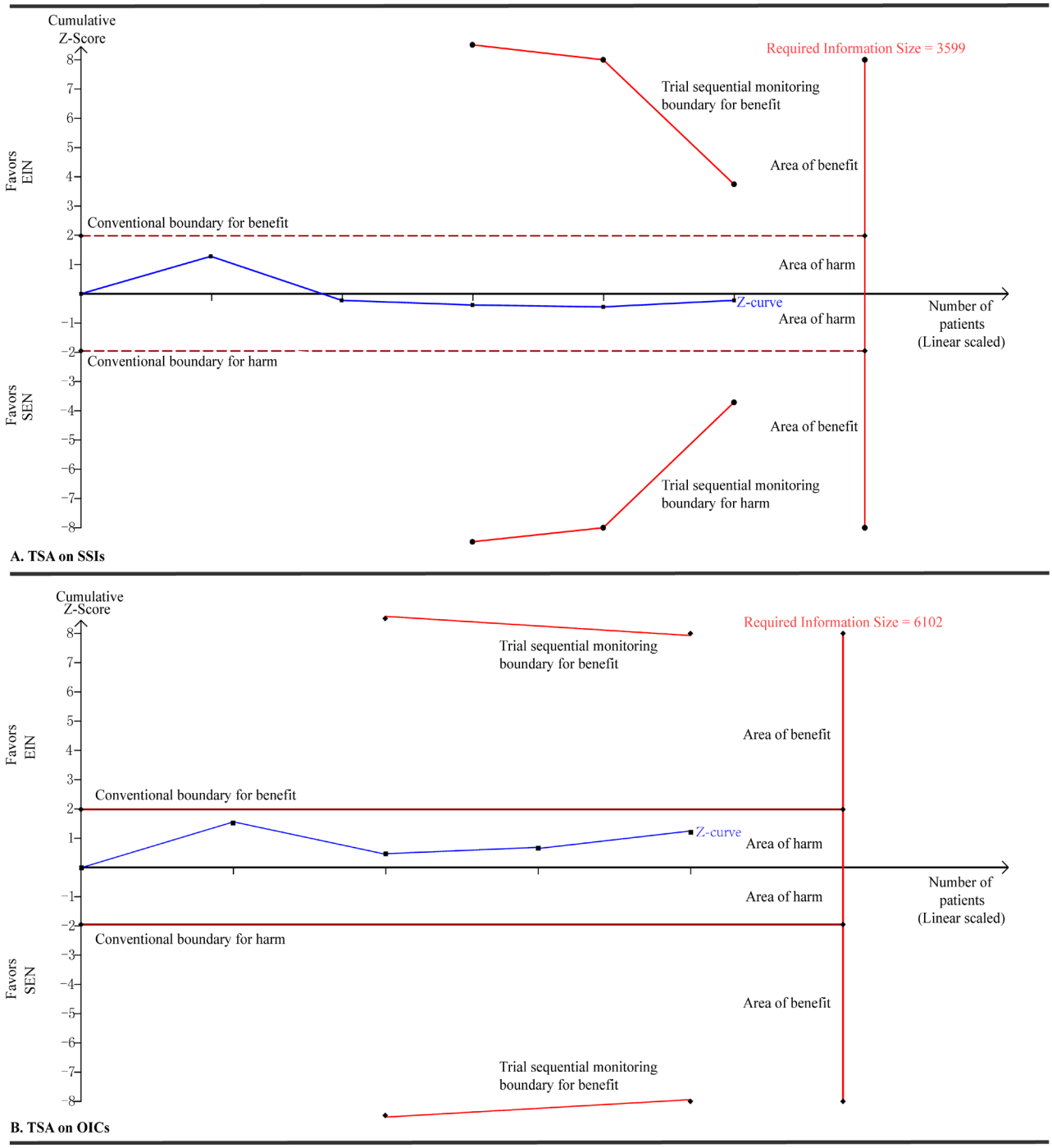

Figure 1: Trial sequential analyses on SSIs and OICs in trials with nutrition support when EIN versus SEN regimes. A diversity adjusted information size of 3,599 (A) and 6,102 (B) patients were calculated using α = 0.05 (two sided), β = 0.20 (power 80%), an anticipated relative risk reduction of 20% and an event proportion of 16.72% and 20.91% in the control arms in terms of SSIs and OICs respectively. TSA illustrated that the cumulative Z-curve did not cross the conventional and TSA monitory boundaries for benefit and that the required information size was not achieved, showing that EIN do cannot improve the clinical status of GC patients undergoing gastrectomy compared to SEN designs. SSIs: surgical site infections; OICs: other infectious complications; EIN: enteral immunonutrition; SEN: standard enteral nutrition; TSA: trial sequential analysis; GC: gastric cancer

only a limited number of trials and a small number of events may overestimate intervention effect estimates and can cause spurious findings.[6] To overcome this issue, efforts have been done and trial sequential analysis (TSA) is introduced eventually to calculate the required information size (RIS) for a meta-analysis,[7] which is used to determine when a conclusion from a meta-analysis is reliable and conclusive.

Considered small eligible studies and observed events

existed in our study,[5] we adopted consequently TSA technique to determine the robust of our pooled results to avoid spurious conclusion. We calculated the RIS to yield "moderate" meta-analytic evidence based on an α of 0.05 with two sided, β of 0.20 (that is power of 80%), an anticipated relative risk reduction of 20%, and an event proportion of 16.72% and 20.91% in the control arms in terms of SSIs and OICs respectively. TSA on SSIs and OICs in trials with SEN showed that the RISs of 3,599 and 6,102 patients are not reached and cumulative Z-curves are not cross the conventional and TSA monitoring boundaries [Figure 1].

The TSA results confirm our pooled findings. In other words, EIN cannot improve the clinical status of patients undergoing surgery for GC. However, the results from our published study showed that EIN is superior to SEN designs in enhancing the host immunity and relieving the inflammatory response,[5] and thus trials with well design are needed to explore whether EIN can improve the degree of infection relative to SEN and the relationship between duration of intervention and incidence of infection.

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Conflicts of interest
There are no conflicts of interest.

Patient consent
No patient involved.

Ethics approval
This article does not contain any studies with human participants or animals.

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