Reviewer's report

Title: L-Carnitine-supplementation in advanced pancreatic cancer (CARPAN) - a randomized multicentre trial

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Reviewer: Albert Lowenfels

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Carnitine study

The authors conducted a randomized controlled trial to assess the potential benefits of L-Carnitine supplementation in patients with advanced pancreatic cancer. Because the prognosis of pancreatic cancer is so poor, we need studies aimed at improving the life of patients suffering from this disease. The justification for using L-Carnitine is that it has shown some benefits in prior trials.

1. The stated aim of the study was to investigate the role of L-Carnitine on cancer cachexia. In view of the rapid disease progression in the cancer, the study would be difficult to perform, and the final analytic sample consisted of only 26 of the initial 152 screened patients. This raises questions about ascertainment bias that cannot easily be answered.

2. From Figure 2, it appears that the investigators achieved their stated aim—that is, there was an increase in BMI, body cell mass and body fat in the treated versus the placebo group that attained statistical significance. Although the trial was underpowered to determine the impact on survival, at least the survival trend is in the right direction. It is conceivable that the therapeutic agent could have led to enhanced tumor cell growth and a shorter survival—this does not appear to have happened.

3. The trial was terminated because of the wide variation in SE's for inflammatory markers. The authors need to explain why this led to study termination, when it appears from the initial aim that weight gain, or quality of life indicators, or survival could have been used as endpoints.

4. Were there any side effects from the therapeutic agent? Information was collected during follow-up visits, but not mentioned in the results. This information should be included in the manuscript.

5. From the limited results, it appears that L-Carnitine has a modestly beneficial impact on overall patient wellbeing. Patients might be more concerned with the clinical outcome than with changes in inflammatory markers.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:
I have no competing interests