

(CASE REPORT)



## Dose optimization for lecithin using blood triglycerides level as guidance

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### Abstract

Lecithin is a phospholipids supplement that has been shown to possess many health benefits. However, the biological properties of lecithin have not been fully evaluated and more research on this supplement is needed. This case study reports an unknown side-effect of lecithin (elevation of blood triglyceride level) and makes some recommendations on how to avoid this problem by optimizing its dose. In the discussion of the issue, this paper also raises the awareness of different susceptibility to medications by different races of people to which healthcare professionals should pay attention.

**Keywords:** Lecithin; Dose Optimization; Blood Triglycerides Level; Body Weight

### 1. Introduction

Lecithin is a group of phospholipids that has many health benefits such as supporting nerve health and brain function, lowering cholesterol, and maintaining cardiovascular, liver and skin health, and therefore is marketed as a popular dietary supplement [1-3]. It is generally recognized as safe. Some side-effects include abdominal discomfort, diarrhea, nausea, and allergic reactions to some people if taken in large quantity. However, the health benefit claims and side-effects of this supplement have not been fully evaluated by the US Food and Drug Administration (FDA), and more research is needed to understand all of its properties. This case study reveals a not very well known side-effect of lecithin (elevation of blood triglyceride level) and makes some suggestions on how to avoid it by fine tuning its dose.

### 2. Material and methods

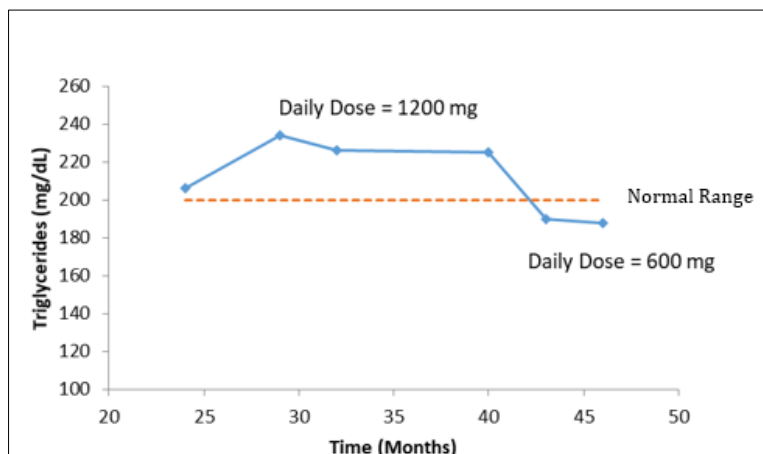
The most common dose of the lecithin products marketed in the US is 1200 mg [1,3,4]. In this study, a 53-year old Asian male was administered orally and daily with 1200 mg lecithin softgel capsules purchased from American pharmacies. Blood was drawn every three months for lipid panel analysis. After 40 months, the dose of lecithin was lowered to 600 mg daily and the lipid level in the blood was measured and compared with the previous 1200 mg arm.

### 3. Results and discussion

Figure 1 shows that the blood triglycerides level during the first 40 months of treatment with a 1200 mg dose of lecithin was above the normal range of less than 200 mg/dL. In the following 6 months when the dose was reduced to 600 mg, the blood triglycerides level dropped to below 200 mg/dL which is normal. There are reports that state that the dose of lecithin at as low as 500 mg would exert some beneficiary effects [2]. Hence a 600 mg dose should be within the therapeutic range.

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In addition, it's the author's opinion that the doses of many medications marketed in the US may not be completely suitable for Asian populations because the body weight of Asians are less than Caucasians and African Americans. Another example of the need for downward adjustment of the doses for Asians is aspirin whose chronic maintenance dose should be decreased from 81 mg to about 49 mg daily [5]. Finally, it will be interesting to further investigate whether or not the portion of the increase in triglycerides level contributed by lecithin is harmful to the body.



**Figure 1** Blood triglycerides level following oral administration of lecithin to an Asian patient at two different doses

#### 4. Conclusion

For those patients whose blood lipid level is inherently high or body weight is relatively low, a daily dose of lecithin lower than 1200 mg is recommended in order to prevent the blood triglycerides level from exceeding the 200 mg/dL normal range.

#### Compliance with ethical standards

##### *Acknowledgments*

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##### *Disclosure of conflict of interest*

The author declares that there is no conflict of interest associated with this work.

##### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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