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## Importance of dosage effect in clinical trials

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**Statement of the Problem:** Therapeutic effect can be obtained by standard dosage and toxicity can occur because of over dosage. It should be taken awareness in doing clinical trials and research to get effective drug response for a particular disease or outcome. It is difficult to know the estimation of dosage in human directly so we do from preclinical research to clinical trial. In this study, different dosages of drug Metformin were monitored, a well-known anti-diabetic agent, on lifespan of *Caenorhabditis elegans* (*C. elegans*) (from worm to human).

**Methodology:** Lifespan of *C. elegans* N2 Bristol wild type was monitored by using liquid culture medium in 96 well plates. 100 worms for each group were cultured in S complete media containing ampicillin (50 µg/ml) and amphotericin B (0.1 µg/ml). We used 50 µg/ml 5-fluoro-2'- deoxyuridine (5-FUdR) in well to prevent hatching. All experiments were performed at 20 °C for 2 times. *C. elegans* were fed live *E. coli* (108 cfu/ml) and added Metformin 1 mM, 5 mM and 10 mM at day 3. After the wells were shaken for 3 minutes, worm survival was checked every other day under an inverted microscope at 50x or 100x magnification.

**Findings:** Different dosages of Metformin 1 mM, 5 mM increase the worm survival in compared to wild type worm in this study. Increasing the dose of Metformin more than 10 mM may not increase the longevity and reduce lifespan of worms when compared to the group of worms exposed to 50 mM Metformin.

**Conclusion & Significance:** The longevity effect of Metformin in worms may be useful as anti-aging agent in human but needs more clinical trials to explore the effect of Metformin. It was concluded that the higher dosage would not produce more increase in longevity and reduce the lifespan of worms which will be considered as important factor in clinical trials.

## Biography

Myat Thu Thu Win has completed her graduation in 2001 and Master of Medical Science (Pharmacology) in 2005 from Institute of Medicine I, Yangon. She received Japanese government (MEXT) scholarship from 2009-2013. She has completed her PhD in 2013 from Kanazawa University Graduate School of Medical Science and worked as Postdoctoral Fellow in the same department for 3 months. She had more than 8 years of teaching and clinical experience as well as 6 years of research experience. She has published research and review papers. She is currently a Senior Lecturer Pharmacologist in the Faculty of Medicine, Asian Institute of Medicine, Science and Technology (AIMST) University.

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