Cite this as: Li-juan SHEN, Shu LU, Yong-hua ZHOU, Lan LI, Qing-min XING, Yong-liang XU, 2016. Developing a rat model of dilated cardiomyopathy with improved survival. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, 17(12):975-983.
http://dx.doi.org/10.1631/jzus.B1600257

Developing a rat model of dilated cardiomyopathy with improved survival

Keywords: Doxorubicin, Dilated cardiomyopathy, Animal models, ^{18}FDG-PET

Research Summary

The aims of this article were to compare continuous infusion and intermittent bolus injection administration protocols of doxorubicin under the same cumulative dose (12 mg/kg), and establish a rat dilated cardiomyopathy model with improved survival. The comparison evaluation included the following:

1. **General state of health**
2. **Mortality**
3. **Echocardiography**
4. **Plasma BNP**
5. **Caspase 3 mRNA**
6. **Histological analysis**
7. **Myocardial metabolism imaging by ^{18}FDG-PET/CT**
8. **Serum CREA and AST, and plasma CRP**

Innovation points

Using intermittent bolus injection administration protocols of doxorubicin under the cumulative dose (12 mg/kg), we established a new rat dilated cardiomyopathy (DCM) model

Compared two dosing regimens of doxorubicin in rats to determine a minimal protocol that can induce DCM while improving survival

Administration of 1 mg/kg of doxorubicin twice a week for six weeks was found to be safe and sufficient for inducing DCM in rats