# Evaluation of patient dose in cardio angiography procedures *in* *Shahid madani hospital*, Tabriz, IRAN

Parinaz Mehnati, Asgar Mesbahi
Department of Medical Physics
Tabriz University of Medical Sciences
parinazmehnati@yahoo.com

# Introduction

- High radiation dose can be delivered to patients during prolonged coronary interventional procedures.
- Interventional cardiology procedures usually consists of flouro Angiography and Angioplasty and cine Angiography during a general Cardiovascular diagnostic and treatment procedures.

# Material & Methods

- A mono-plan flat detector-based angiography system (Philips, BH3000) was used in this study.

- To check the accuracy of time, tube voltage and Dose-area product (DAP) provided by systems, the Diadose (PTW-Freiburg, Germany) dosimeter was used.

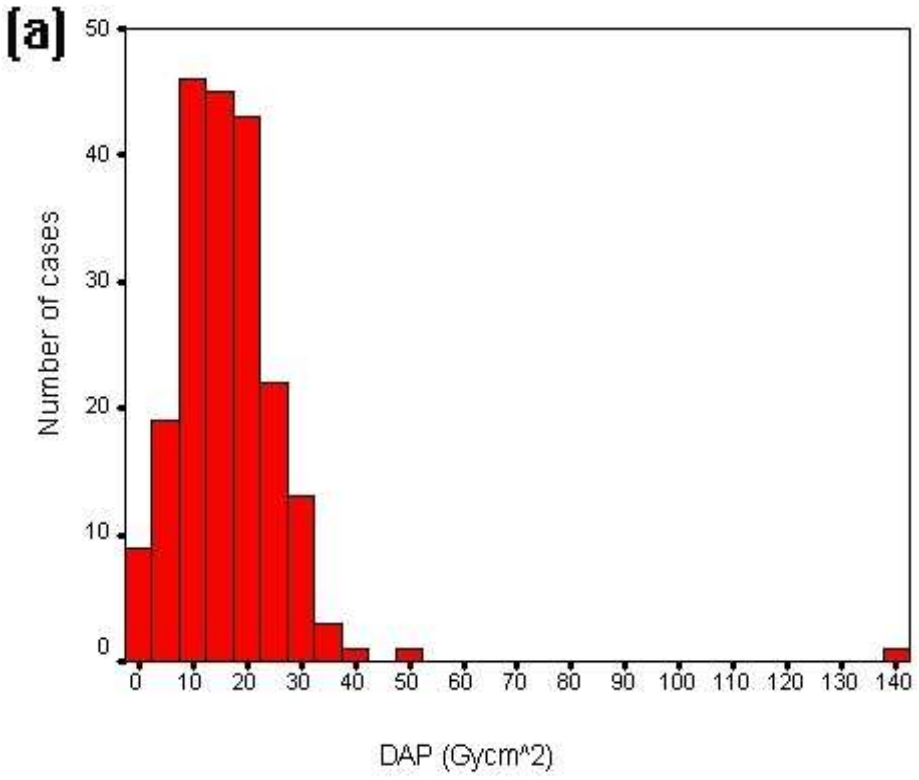
# Material & Methods

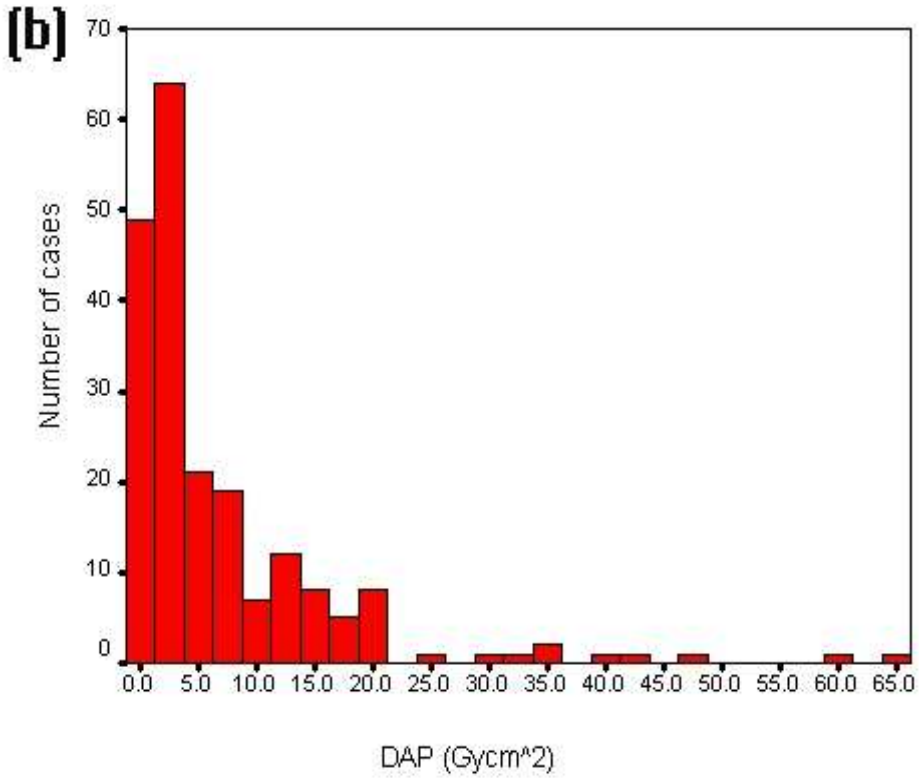
- 236 patients doses in terms of Dose area Product (DAP) was recorded using the angiography system provided data at the end of examination for two techniques of flouro-angiography and cine-angiography.

# Results

- The average DAPs of 23.7 and 91.5 Gycm$^2$ were estimated for angiography and angioplasty, respectively.
- Average Patient doses for angiography including fluoroscopy, cine acquisition and total dose for angiography were 2, 7.7 and 3.8 times lower than angioplasty procedures, respectively.

# Frequency distributions of total patient dose during coronary angiography procedures

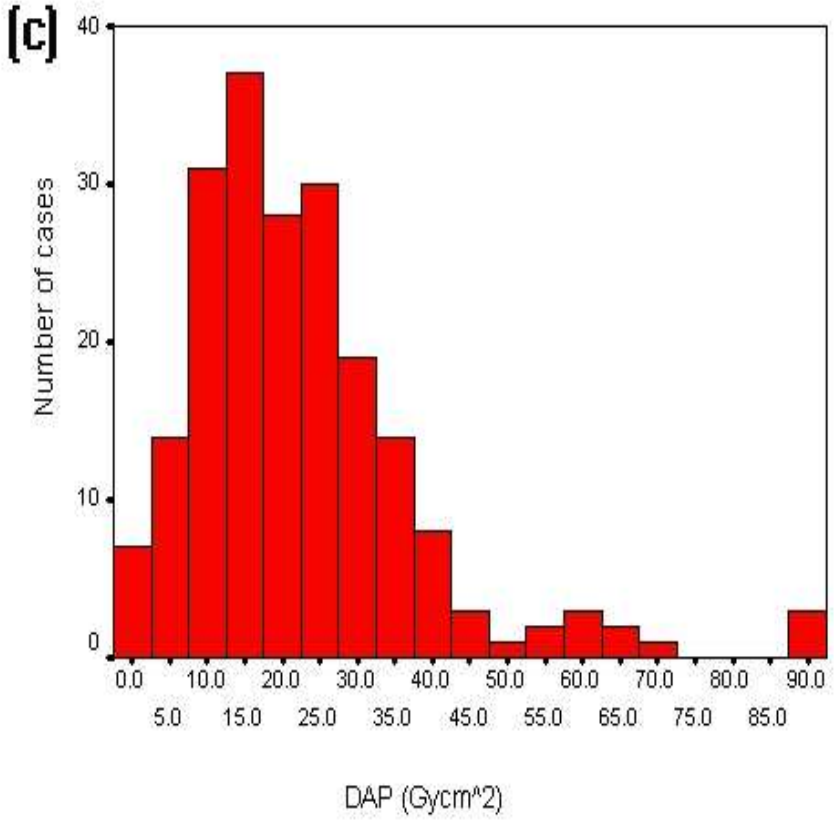


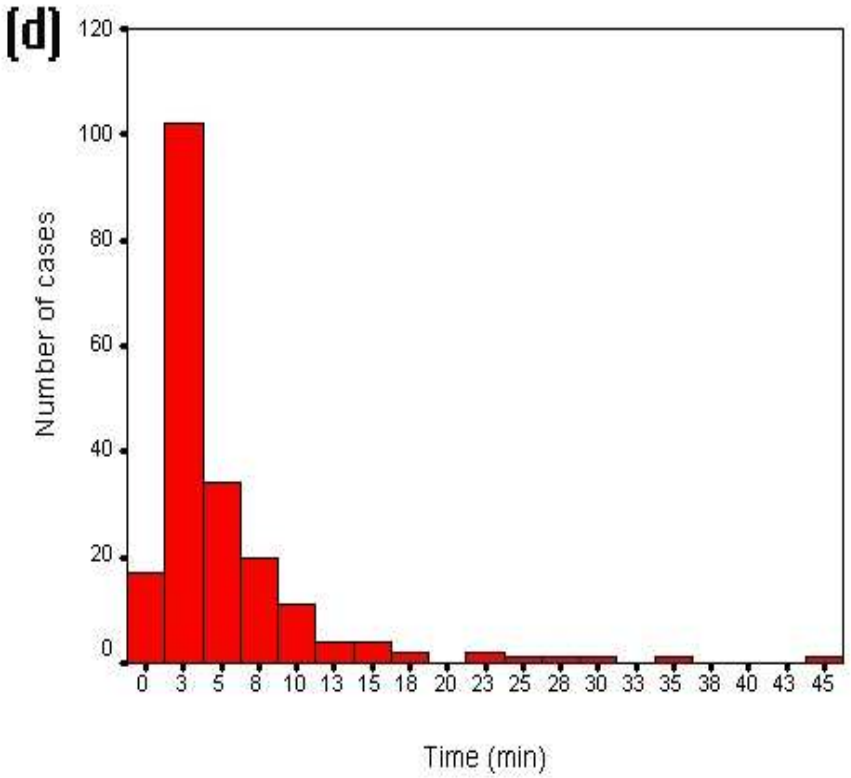




**a) Cine-acquisition**

**b) Fluoroscopy**

# Frequency distributions of total patient dose during coronary angiography procedures

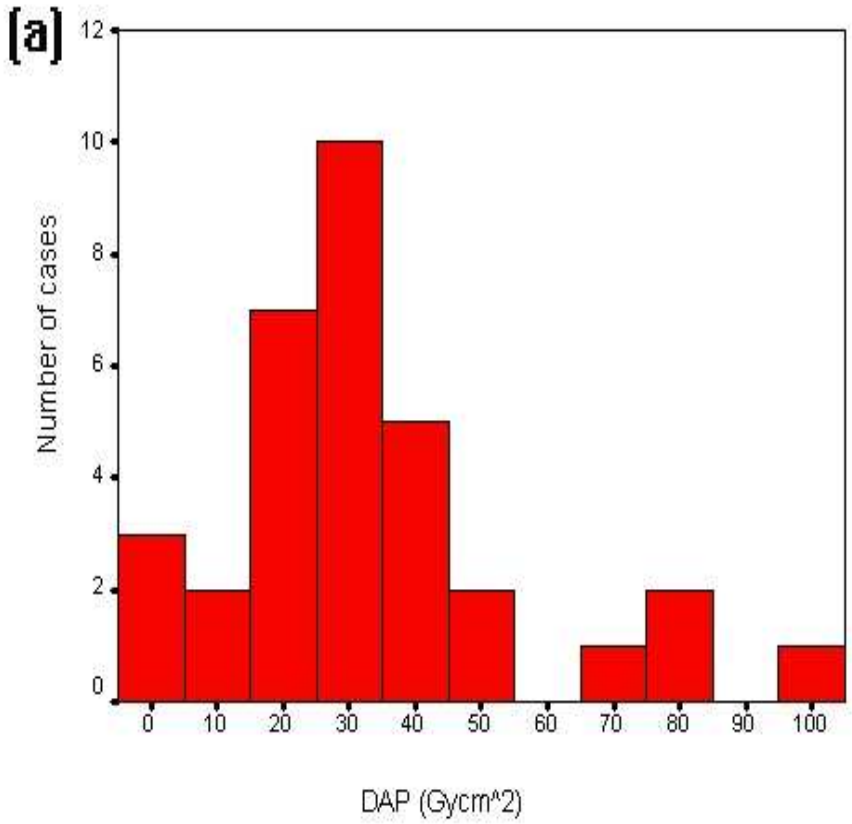


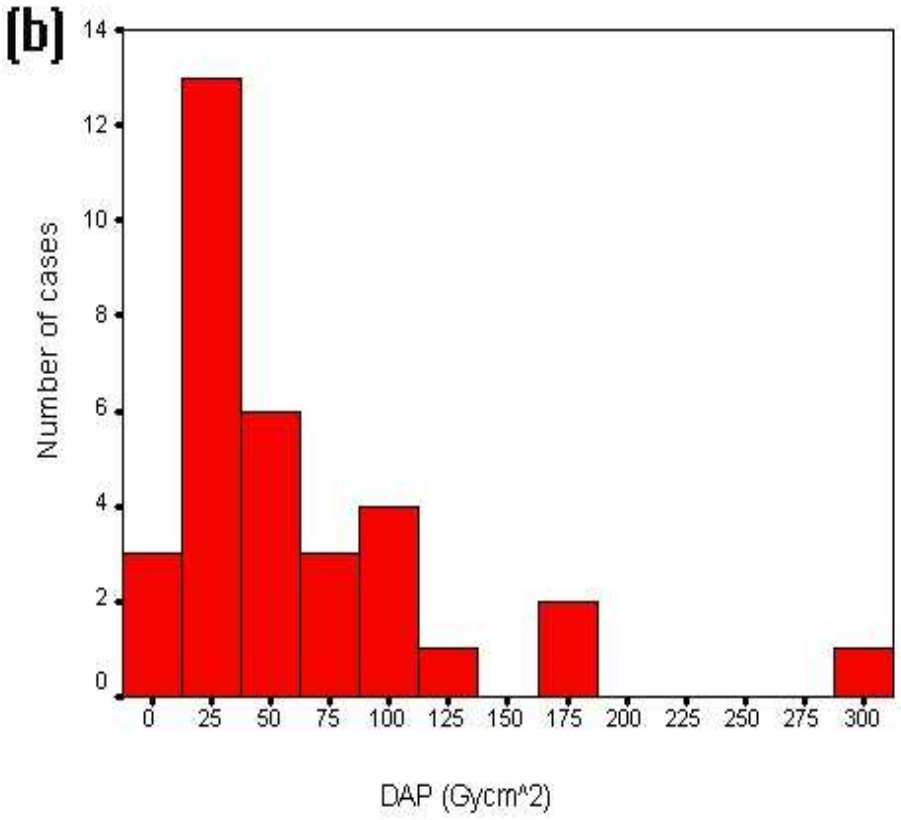

**c) Total dose for angiography**

**d) Time of Fluoroscopy**

# Frequency distributions of total patient dose during coronary angioplasty procedures.

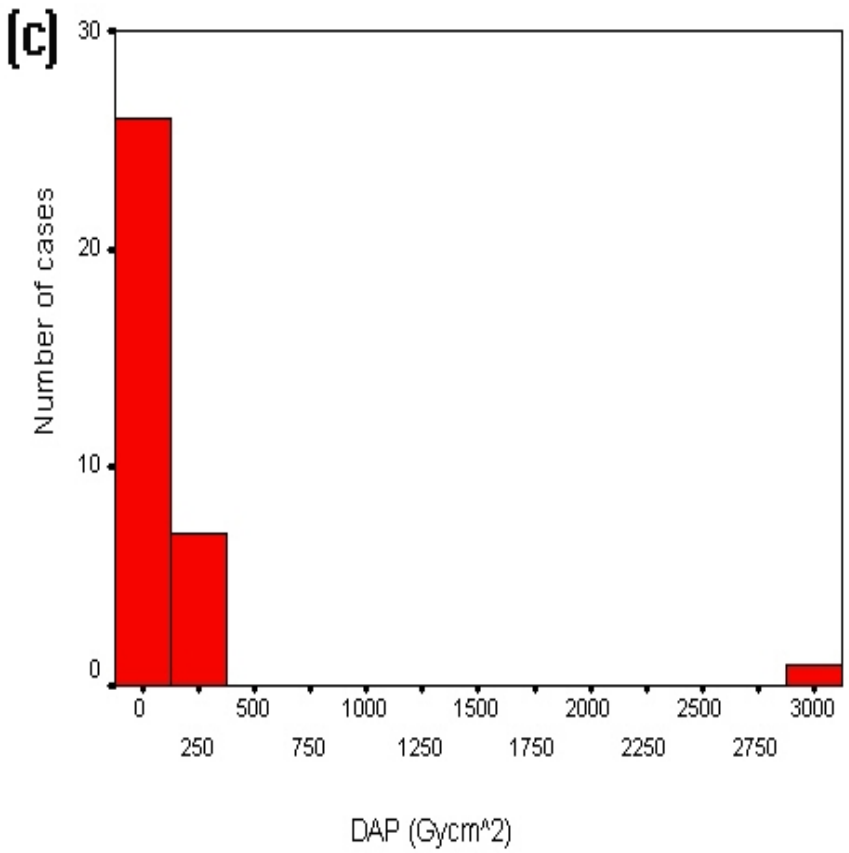



**a) Cine-acquisition**

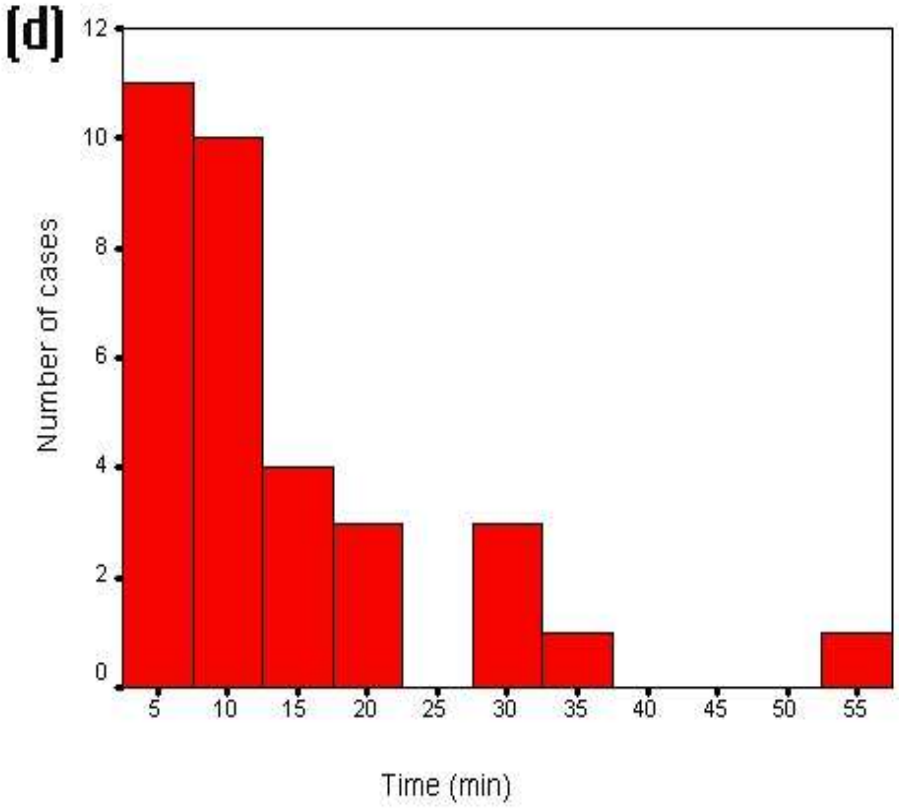



**b) Fluoroscopy**

# Frequency distributions of total patient dose during coronary angioplasty procedures.




**c) Total dose for angioplaty**




**d) Time of Fluoroscopy**

# Conclusion

The dose of patients during angioplasty procedures was higher compared to other reports. To reduce patient dose, use of the lowest available frame rate, smallest field size are recommended.