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## Study on the necessity of graphs in patients with trauma and some related factors in Imam Khomeini Hospital of Sari in 2013

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**Introduction:** Trauma is defined as any injury or harm which is caused by the collision of physical and chemical agents with body tissues. The accident patients due to their traumatic conditions are prescribed multiple graphs by their physician and because of these multiple graphs; they are exposed to x-ray frequently which imposed some risks to them. This study deals with the necessity of these graphs in trauma patients.

**Methods:** This study was a descriptive cross-sectional study which examined the requests of patients to the radiology department of Imam Hospital with a sample of 186 participants' in 1391-1392. The injured organ from the patient's view was specified and after reviewing the correspondence between requests with injured areas and observing the results of graphs, the data were entered into questionnaire forms.

**Results:** In this study, 186 trauma patients were investigated. Of the patients, 67 people (36%) had 5 - 8 graphs and 71 people (38/2 %) had 9-12 graphs. Besides, a total of 1670 patients were performed graph and the average of graphs for each person was 10-11. The most frequent radiography was related to radiography of lower organs with a frequency of 750.

**Conclusion:** The average of graph for each patient was 10-11 and by this average number of graph, it could be understood that the received dose of patients is closed to the maximum permissible dose which is announced annually in sources. With comparing the number of necessary graphs with unnecessary ones in trauma patients, it is concluded that these patients undergo some threats during radiography.

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## Molecule dynamics studies of G3 PAMAM dendrimer conjugated Ho (III) DTPA-Folic acid in vacuum and aqueous conditions at 25°C and 37° C as compound contrast agent Magnetic Resonance Imaging (MRI)

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Molecular modeling has been carried out G3 PAMAM dendrimer conjugated Holmium (III)-penta acetic acid diethylenetriamin (DTPA) and folic acid in vacuum and aqueous conditions at 25°C and 37°C by using the program ChemBio 3D 12.0. These compounds are expected to be used as MRI contrast compounds that specific for diagnostic cancer cells and also serve as a cancer therapy. Prior to molecular modeling and molecular dynamics studies, first performed Holmium parameterization for compounds that have not been found on the Chem 3D program. Parameterization, including bond lengths, bond angles, angles and force constants respectively. Further molecular modeling performed with the program chem draw and molecular dynamics calculations to see the value of the stability of the total energy and potential energy. Molecular dynamics simulation results obtained value of the potential energy and total energy of the compound conjugated PAMAM G3 Ho (III) DTPA and folic acid is more stable at 25°C in aqueous conditions.

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