Introduction: The contrast medium was widely used in the presentation of image now. Acute allergic-like reactions are a well-known complication of intravenous nonionic iodinated contrast media injections and range from mild symptoms such as urticaria and itching to more severe reactions such as cardiovascular arrest and death. Although the symptoms of allergic-like reactions resemble hypersensitivity reactions, the exact mechanism is unknown. But the rate of adverse reaction to ionic contrast medium was obviously increased than that in non-ionic contrast medium. Ionicity is the characteristic of a molecule to break up into a positively charged cation and a negatively charged anion. The contrast medium was widely used in the presentation of image now. But the rate of adverse reaction to ionic contrast medium was obviously increased than that in non-ionic contrast medium. Ionicity is the characteristic of a molecule to break up into a positively charged cation and a negatively charged anion. At this electronic reporting system. The radiologist will report if any adverse reaction after examination with intravenous contrast medium: Iohexol (GE Healthcare Inc, Figure 2) and Ioversol (twin-44 Contrast medium). The type of adverse reaction was divided into 3 levels: mild, moderate and severe. (Table 2).

Purpose: The purpose of this study is to address the incidence rate of non-ionic iodinated contrast medium adverse reaction in a university hospital.

Materials and Methods: The non-ionic iodinated contrast medium was used in China medical university hospital since July 2008. We established a unique electronic adverse event reporting system in our hospital since 2008. Since January 2001, we prospectively collected data of the adverse reaction after non-ionic contrast medium injection by this electronic reporting system. The radiologist will report if any adverse reaction occurred on examination with intravenous contrast medium. There were 3 kinds of non-ionic iodinated contrast medium: Iohexol (GE Healthcare Inc, Figure 1), Iodixanol (GE Healthcare Inc, Figure 2) and Ioversol (twin-44 Contrast medium). Multiple studies have been done on this topic. In conclusion, there was no fatal reaction with non-ionic contrast medium intravenous injections. There was mild decreased incidence rate of adverse reaction in our study compared with Carolyn L. Wang et al. In their study of 84,928 IV injections of nonionic contrast media, there was a 0.0% reaction rate, with 77% of the reactions being mild, 21% moderate, and 2% severe. There were no also deaths. The result of our study revealed that there was no fatal reaction occurred.

Discussion: 1. The average of adverse reaction rate in our study is around 0.34% - 0.41%. Some studies and associates reported that 3.13% of patients injected with nonionic contrast media had an adverse reaction. In more recent studies, Mortelet et al. and Cochrane and associates reported adult adverse reaction rates of 0.7% and 0.3%, respectively, for nonionic iodinated contrast media intravenous injections. There was mild decreased incidence rate of adverse reaction in our study compared with Carolyn L. Wang et al. In their study of 84,928 IV injections of nonionic contrast media, there was a 0.0% reaction rate, with 77% of the reactions being mild, 21% moderate, and 2% severe. There were no also deaths. The result of our study revealed that there was no fatal reaction occurred.

2. Esteban S. et al reviews and suggested that patients who had a reaction to an intravenous contrast agent in the past, and patients with systemic disease that increases their risk for contrast reaction.

3. Knut B. et al showed that the possible pathophysiology is associated with histamine release from basophilic and mast cells. A higher histamine release after incubation of high osmolar ionic monomeric RCM in comparison with low osmolar ionic monomeric RCM has been reported for rat and human mast cells and for human basophils. Increasing evidence suggests that immediate hypersensitivity reactions may indeed be caused by an IgE-mediated allergic mechanism.

Conclusion: Use of non-ionic contrast medium had low 'incidence rate of adverse reaction around 0.34% - 0.41%.' In addition to that, there was no fatal reaction with non-ionic iodinated contrast medium in IVPE and CT scan. In conclusion, the non-ionic iodinated contrast medium was a safe and effective in Taiwan.