NPO REQUIREMENTS FOR IV ENHANCED CT EXAMS
A QUALITY IMPROVEMENT INITIATIVE

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Clinical Dilemma:

At our institution, any intravenous contrast CT examination required a minimum of 4 hours of NPO status prior to examination. The rationale was to avoid any adverse events such as nausea and vomiting which was common with older ionic contrast agents; however given the use of non ionic agents the need for such a long NPO status was unclear. Both clinicians and patients found this protocol to be a barrier to same day examinations and increased waiting time for patients. No clear evidence was found to support 4 hours of NPO status. A quality improvement initiative was then proposed to investigate if a shorter NPO status would be effective and sufficient.

Methods:

Data on all patients receiving IV contrast regardless of oral contrast was obtained. Both iohexol (Omnipaque 300®; Omnipaque 350®, Novaplus) and iodixanol (Visipaque 320®, Novaplus) contrast agents were used. Contrast volumes ranged from 60 cc-125 cc. The range of contrast injection rates were 2cc/sec-5 cc/sec.

Patient data was collected over a two month period. For the first 4 week period the protocol of 4 hours of minimum NPO status was used. Data on all patients receiving IV contrast and oral contrast was obtained. The quality improvement initiative was then instituted for the second 4 week period. Patients were required to have a minimum of 2 hours of NPO status. Data on all patients receiving IV and oral contrast was again obtained.

Results:

Our results indicated that the 2 hours minimum NPO status was sufficient and safe to institute as our standard NPO protocol for intravenous contrast enhanced exams. Both clinicians and patients were able to benefit from increased efficiency and decreased waiting time for same day examinations thus providing diagnostic results in a more timely manner.

Data:

NPO status	Number of exams	Oral and IV contrast	IV contrast only	Adverse events
4 hours NPO	1012	610	402	0
2 hours NPO	822	555	267	0

Summary:

- The rationale for a specific number of hours a patient needs to be NPO for contrast enhanced exams is unclear as most protocols use experience from older ionic contrast agents for their protocols. Given the use of newer non ionic contrast agents the need for such a long NPO requirement is unnecessary.
- A 2 hour minimum of NPO status prior to intravenous contrast administration is sufficient to avoid adverse events. Further investigation with even shorter NPO requirements maybe useful to even further improve exam efficiency.
- Shortening the NPO requirements for intravenous contrast enhancement improves both patient and referring physicians' satisfaction as well as increasing efficiency within the Diagnostic Radiology department.

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