2020

ASMIRT

Guidelines

IV Cannulation and Contrast Media

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Australian Society of Medical Imaging and Radiation Therapy
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There are a number of protected titles for medical radiation practice. They include:

Medical Radiation Practitioner (MRP)

Diagnostic Radiographer (DR)

Medical Imaging Technologist (MIT)

Radiographer

Nuclear Medicine Scientist (NMS)

Nuclear Medicine Technologist (NMT)

Radiation Therapist (RT).

For the purposes of our documentation we use the broad descriptor Medical Radiation Practitioner (MRP) recognising that it covers a range of areas of practice.

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Venepuncture / Cannulation Guidelines

Venepuncture is the procedure of obtaining intravenous access, which may be achieved using a variety of peripheral venous access devices. The term cannulation is applied when venepuncture is performed by means of a venous cannula.

Medical Radiation Practitioners performing venepuncture and / or cannulation must be adequately trained in the relevant procedures. Formal certification of a Medical Radiation Practitioner's clinical competence in venepuncture and / or cannulation should only occur after successfully completing a well-defined, structured clinical training program endorsed by their organisation / institution / employer. The clinical training program should include, but not be limited to, the following:

- Vascular anatomy and physiology
- Vein selection
- Insertion technique
- Aseptic technique and universal precautions
- Complications
- Medical and legal implications

Certification in venepuncture and cannulation should be renewed on an annual basis and a register of certified staff should be maintained by the individual's organisation / institution / employer.

From a professional indemnity perspective, ASMIRT members who work within their scope of professional practice and training are eligible for cover by ASMIRT's professional indemnity insurance policy.

These guidelines should be read in conjunction with ASMIRT's – Guidelines of Professional Conduct.

Intravenous Agent Administration Guidelines

These guidelines are limited to the intravenous injection of contrast agents and other agents by Medical Radiation Practitioners for specific diagnostic imaging procedures.

After an extensive review of State and Territory Poisons Act legislation, it was found that Medical Radiation Practitioners were not included in the specific vocations to potentially administer agents in the healthcare settings. As such it is recommended that Medical Radiation Practitioners only administer agents pertaining to diagnostic imaging procedures. They will need to be specifically credentialed to administer any other form of agent, which is not specifically required for diagnostic imaging procedures.

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For completeness, this document includes a list of the State and Territory legislations pertaining to medical drugs and poisons. They are as follows:

Australian Capital Territory – Medical Poisons and Therapeutic Goods Act 2008
https://www.legislation.act.gov.au/a/2008-26/current/pdf/2008-26.pdf

New South Wales – Poisons and Therapeutic Goods Act 1966 No.31
https://www.legislation.nsw.gov.au/~/view/act/1966/31

Northern Territory – Poisons and Dangerous Drugs Regulations 2004
https://health.nt.gov.au/...health/...poisons.../medicines-and-poisons-control

Queensland – Health (Drugs and Poisons) Regulations 1966
https;//www.legislation.qld.gov.au/view/pdf/2017-10-01/sl-1996-0414

South Australia – Controlled Substances (Poisons) Regulations 2011
https://www.legislation.sa.gov.au/lz/c/r/controlled%20substances%20(poisons)%20regulations%202011/current/2011.140.auth.pdf

Tasmania – Poisons Regulations 2018
https://www.legislation.tas.gov.au/view/html/inforce/current/act-1971-081

Victoria – Drug Poisons and Controlled Substances Act 1981
https://www.legislation.vic.gov.au/Domino/Web_Notes/.../81-9719a091.pdf

Western Australian – Poisons Act 1964
https://www.legislation.wa.gov.au/...nsf/main_mrtitle_728_homepage.html

Consequently, Medical Radiation Practitioners who administer intravenous contrast and other agents must have adequate training in local policies and procedures relating to patient screening for risk factors and agent types, volume and administration methods for the types of examinations being undertaken. Certification of a Medical Radiation Practitioner's clinical competence in agent administration should only occur after successfully completing a well-defined, structured clinical training program endorsed by the individual's organisation / institution / employer.

The administration of intravenous contrast and other agents by Medical Radiation Practitioners must be carried out under the supervision of an appropriately registered Medical Practitioner (ideally a Radiologist), who is present on site for immediate assistance in the event of an agent reaction or extravasation injury. Medical Radiation Practitioners should ensure the designated registered Medical Practitioner is aware that intravenous diagnostic administration is taking place.

Medical Radiation Practitioners must be trained in the recognition of contrast and other agent reactions, the location of emergency equipment and appropriate first response actions, and they must hold current accredited cardiopulmonary resuscitation (CPR) or basic life support (BLS) certification. From a professional indemnity perspective, ASMIRT members who work within their scope of professional practice and training, are eligible for cover by ASMIRT's professional indemnity insurance policy.

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Those practitioners who decide to work outside their scope of practice may not be covered by any professional indemnity insurer. In line with this policy (and stated above), an example of a Medical Radiation Practitioner working outside their scope of practice is administering any other form of agent, which is not specifically required for diagnostic imaging procedures.

These guidelines should be read in conjunction with ASMIRT's – Guidelines of Professional Conduct, and in association with the Royal Australasian College of Radiologists (RANZCR) – Iodinated Contrast Media Guideline (V2.3).[1]

Intravenous Agent Administration during Radiotherapy Simulation[2,3]

- The addition of an intravenous contrast agent immediately prior to a radiotherapy planning CT scan enhances soft tissue differentiation and visualisation, which can facilitate target volume/organ-at-risk delineation with increased accuracy and ease.
- The administration of the IV contrast agent will be done by a qualified contrast administrator. This may be an oncology nurse, radiation therapist, or medical practitioner (radiation oncologist). The IV contrast administrator must adhere to national, state and institutional guidelines for the safe administration of IV contrast.
- Only radiation therapists who hold current and relevant training in intravenous cannulation and contrast administration shall undertake the procedure. Competence of the procedure is defined by institutional policies, with reference to State and Territory legislation for the administration of drugs.
- The administration of the contrast media must be carried out under the supervision of a qualified medical practitioner (preferably the radiation oncologist). That medical practitioner must be immediately available in the event of an adverse reaction during the procedure, and for at least 15 minutes after the procedure (30 minutes for at-risk patients).
- Where a contrast agent is used, the radiation therapist (RT) must have knowledge of its function, to better localise a tumour, and to identify adverse contrast related complications or reactions. The RT must also have the knowledge and skill to respond to such events. This includes suitable training in basic life support and CPR.
- Administering non-vascular contrast agents also has inherent risks. Whilst adverse events are uncommon, institutions should take precautions similar to IV contrast administration.

Radiation therapy departments should also define local guidelines, including:

1. Evidence based identification of tumour sites that have been shown to benefit from the addition of contrast, including contrast agent, dosage, and timing protocols.
2. Address dosimetric impacts of the contrast agent on the planning CT scan; including whether a dual scan (with and without contrast) or single scan protocol is preferable, and whether density corrections are required.
3. Develop screening assessment to identify at-risk patients
4. Develop emergency and extravasation response policies. This includes readily accessible equipment and rapid response advanced life support

References:

1. Iodinated Contrast Media Guideline 2018, The Royal Australian and New Zealand College of Radiologists, Sydney.

2. 427-Contrast administration for radiotherapy simulation scans | eviQ 2018, NSW, https://www.eviq.org.au/clinical-resources/radiation-oncology/contrast-administration/427-contrast-administration-for-radiotherapy-simul. Viewed May 2020

3. 1083-Clinical procedure - intravenous (IV) contrast administration for radiotherapy simulation scans | eviQ 2017, NSW, https://www.eviq.org.au/clinical-resources/radiation-oncology/contrast-administration/1083-clinical-procedure-intravenous-iv-contras. Viewed May 2020

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