British Cardiovascular Society

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NHS Improvement

NHSI Patient Safety Alert: Restricted Use of open Systems for Injectable Medication during interventional procedures

Clarification for cardiology cath lab practice on behalf of BCS/ NHSI

The cardiology cath lab community have been discussing how to interpret and action the NHS Improvement Patient Safety Alert on the Restricted Use of Open Systems for Injectable Medication during interventional procedures, issued September 2016 (1).

This 'directive' alert asks healthcare providers to stop the use of open systems for injectable medication (with the single exception of where the practice is used for embolisation procedures (1). The primary focus of this alert relates to the risk of harm from accidentally injecting cleaning agents from open gallipots, or other types of open container, after mistaking them for the intended medication. Whilst removing cleaning agents reduces this risk, a far more effective barrier to error is to eliminate the use of any open containers for medication intended for injection.

This risk was first highlighted through a National Patient Safety Agency safety alert in 2007 (2). Since then there have been two serious cases of cleaning solutions being injected inadvertently into the circulation (one into a femoral artery resulting in limb amputation and one into a subclavian vein resulting in cardiac arrest). Cleaning agents should no longer be kept in open gallipots or other open containers on cath lab tables. In view of the severe harm associated with this risk, all organisations providing NHS-funded care are expected to already have addressed this. However, in view of the uncertainty around other non-cleaning liquids the BCS have sought clarification.

There still remains a risk that any open medication could be mistakenly injected into the circulation if not in a closed, clearly labelled device. Although it is acknowledged that the risk of harm from mistaking open tubs of saline with contrast is low, the acceptance of medication being placed in open containers for injection creates an unsafe environment where mistakes could potentially occur. On occasion, other injectable substances may end up being in open containers on cath lab trolleys which poses a risk.

The BCS supports the requirement of the NHS Improvement alert that it is never acceptable to draw up medication/fluids intended for injection from an open container, and confirms that the only procedure that is an exception to this is related to the use of embolization particles (3).

Saline/ Saline and contrast mix

Open containers of saline intended for injection should no longer remain on cath lab trolleys but be replaced by either a bag of saline with valve, which can be drawn into labelled syringes directly as required, or by using pre-filled saline syringes.

As contrast/saline mixes used for inflating balloons/stents are not routinely intended for actual intra-vascular injection, it is acceptable that they can remain in open containers. However if a saline/contrast mix is required for intra-vascular injection (separate from the closed manifold) then this needs to be drawn up into a closed system/syringe and labelled.

This alert also applies to the preparation of devices for **Structural Intervention** e.g. TAVI and ASD devices. Devices should be flushed with syringes of saline drawn from a closed system (not open containers).

Water

Many cath lab trolleys also have a large bowl for keeping equipment under water/ saline for later re-use during the procedure. As this water is not for injection it can remain on the trolley in an open bowl.

Skin preparation/ cleaning solutions

All cath lab departments should ensure that open gallipots of skin preparation/cleaning solutions are not used.

February 2018

References:

1. https://improvement.nhs.uk/uploads/documents/NHSI_Patient_Safety_Alert_-_Restricted_use_of_open_systems.pdf
2. http://www.nrls.npsa.nhs.uk/resources/?entryid45=59812
3. http://www.bsir-qi.org/site_media/editor-uploads/injectables%20advice%20080216SC.pdf