ASSESSING NURSES CONFIDENCE IN MANAGING IOP SPIKES: A QUALITY IMPROVEMENT PROJECT

This is a quality improvement project conducted in the Eye Clinic in Royal Blackburn Hospital, under the supervision of Mr Mohamed Alarbi.

AUTHORS

Author: Dr Maryam Al Khalifa

Co-authors: Dr Hoozaifa Master, Dr Miguel Kurc, Dr Hugo Whyte, Dr Eesaa Longden

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NHS East Lancashire Hospitals NHS Trust
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Introduction

Nurses play an important role in performing Intravitreal Injection Therapy (IVT) and managing complications that may arise, such as Intraocular pressure (IOP) spikes. However, the confidence and training of the nurses in managing these complications have not been widely explored. This quality improvement project aims to examine the confidence of nurses before and after implementing changes such as posting an easy-to-follow flow chart highlighting the step-wise management of IOP spikes in the injection room, as well as making sure the necessary tools and medications are easily accessible by nurses and doctors and are available in a box within or nearby the injection room. This project aims to provide valuable insights to optimize the care and outcomes of patients undergoing intravitreal injections.

Objective

1- Assess the confidence of the nurses in performing IVT.

2- Evaluate the confidence and knowledge in managing post injection IOP spikes.

3- Identify areas in which the nurses require additional support or training.

4- Implement a flow chart to guide the management of IOP spikes.

5- Set up an 'IOP Spike box' containing the necessary tools and medications required for management.

6- Reassess the nurses' confidence after implementation of these changes.

Methodology

A questionnaire was developed to assess the confidence of the nurses performing IVT and assessing IOP spikes. The questionnaire was distributed amongst all the nurses who perform these injections in Royal Blackburn Hospital. Additionally, a flow chart has been designed and posted in the injection room as a visual aid to guide nurses on the management of IOP spikes (Figure 1). We will also make sure to have an 'IOP spike box' available in the injection room containing Iopidine 1% and an iCare machine. Following the implementation of this, the nurses' confidence was reassessed.

Results

According to these results, the nurses' level of comfort and training in assessing and managing IOP spikes varies, with some feeling comfortable and well-trained and others having lower levels of confidence, as you can see in Figure 2. To ensure patient safety and provide the best care possible, additional training and support for nurses D, E, and those who have not received training on recognizing and managing IOP spikes may be beneficial.

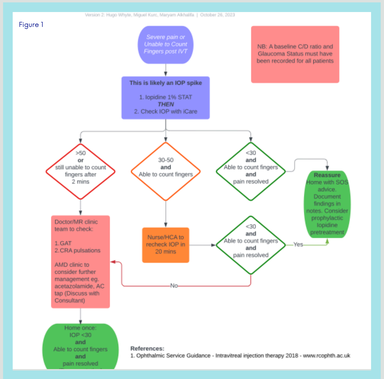


Figure 1

3 months after posting the flow chart in the injection room - a different questionnaire was distributed to the nurses to re-assess their confidence in managing IOP spikes. Have a look at this comparison graph below. Their confidence before implementing the flow chart is shown in light purple, and their confidence post flow chart is shown in dark purple, with 5 being very confident, and 0 being not confident at all.

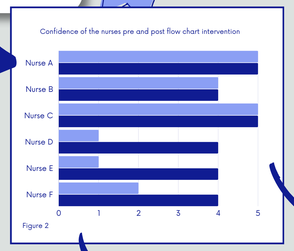
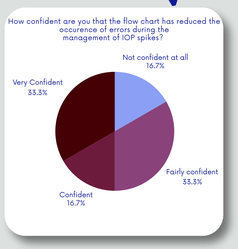


Figure 2

Although the flow chart did not significantly affect Nurse A, B, and C, it is widely agreed among nurses that it has effectively reduced errors in managing IOP spikes. This is attributed to the fact that less experienced and less qualified nurses now have a visual reference for managing IOP spikes readily available, leading to a decreased need to consult senior nurses and doctors during medical emergencies



The impact of the flowchart varied among the nursing staff. Experienced nurses derived minimal or no benefit from its implementation, whereas less experienced nurses experienced a notable increase in confidence.

This shows that the lack of benefit experienced by certain nurses from the flow chart does not necessarily indicate any fault with the flow chart itself. Instead, it suggests that these particular nurses already possessed the necessary knowledge and skills, rendering the flow chart unnecessary for their needs.
By identifying the various levels of experience amongst these nurses, we can leverage senior nurses' expertise by giving them the opportunity to share their knowledge and teach new staff about managing complications associated with intravitreal injections (IVT). This can be accomplished through workshops tailored to these aspects of IVT.

Nurses' Experience

Before evaluating the effectiveness of the flow chart, it is crucial to acknowledge the varying baseline levels of experience among the chosen nurses.

NURSES	INJECTIONS IN THE LAST 6 MONTHS	RECEIVED TRAINING ON IOP SPIKE MANAGEMENT	WHAT ADDITIONAL SUPPORT (IF ANY) DO YOU NEED?	HOW OFTEN DO YOU CONSULT DOCTORS?	HOW WOULD YOU MANAGE IOP SPIKES?
Nurse A	2000	✓	None	Daily	Check IOP and ask doctors for help
Nurse B	2000	✗	Training on IOP Spike Management	As required	Ask doctors for help
Nurse C	600	✓	None	As required	Check IOP and ask doctor for help
Nurse D	5	✗	Training on IOP spike management	As required	Check IOP and ask doctor for help
Nurse E	2000	✓	Further training on management and when to escalate	As required	Check IOP and ask doctor for help
Nurse F	1400	✓	Further training on management and when to escalate	Not often	Ask doctor for help

Figure 3

Discussion

Recognition and management of IOP spikes after intravitreal injections are crucial for patient safety. The survey revealed that not all nurses received training in this area, indicating a potential gap in their knowledge and skills. Nurse B and D, who reported not receiving such training, should be prioritized for education and support to ensure consistent and effective management of IOP spikes. One limitation of this study is its restricted scope, as it was conducted solely within a single hospital and clinic, involving a limited sample of only six specialist nurses.

The nurses' responses regarding actions to take when suspecting an IOP spike varied, with some nurses involving doctors immediately, while others checked IOP levels first. This disparity suggests the **need for clear and standardized protocols** outlining the appropriate steps to follow in these situations. Standardized protocols and readily available resources, such as flow charts outlining the management steps for IOP spikes can improve overall patient care.

We propose that enhancing documentation by **modifying patient sheets to incorporate cup-disc ratios** will aid in the **identification of high-risk patients** before injections.

The flow chart has been widely acknowledged by nurses as an effective tool in reducing errors during the management of IOP spikes. Its visual representation provides less experienced nurses with a readily available reference, minimizing the need for consultation with senior nurses or doctors during medical emergencies.

Additionally, we have created an "IOP Spike Box" in the injection room, containing the iCare machine and 1% iopidine. This eliminates the need to search for these tools in the clinic, speeding up the process of managing IOP spikes and reducing potential delays or errors.

As an additional intervention, mentorship workshops involving experienced nurses can improve IOP spike management. These workshops will allow experienced nurses to share their knowledge and assist new staff in accurately measuring IOP spikes and addressing complications.This will boost their confidence and ensure consistent management across the nursing team. Even though the mentorship workshops have not yet been put into practice, it is impossible to ignore how they could improve IOP spike management. The clinic could establish a learning environment and improve the abilities of all nurses who administer injections through the use of this intervention. The clinic can guarantee the workshops' efficacy by proactively soliciting feedback from attendees and making necessary adjustments.

Conclusion

The survey results indicate varying levels of comfort and training among nurses in recognizing and managing IOP spikes, with those having lower confidence potentially benefiting from targeted education and support. The flowchart intervention was more beneficial to less experienced nurses, while senior nurses with adequate knowledge did not find it as helpful. Utilizing senior nurses' expertise in mentorship workshops can enhance IOP spike management. It is essential to provide clear and standardized protocols for nurses to follow in managing IOP spikes. Enhancing documentation and creating an "IOP Spike Box" are additional interventions to improve patient care. Although mentorship workshops have not yet been implemented, they hold the potential to create a learning environment, improve nurses' abilities, and ensure consistent IOP spike management.

AFFILIATIONS

East Lancashire Hospitals Trust

RELATED LITERATURE

Ophthalmic service guidance – Intravitreal injection therapy 2018 – www.rcophth.ac.uk