

Using Acupuncture in the Prevention and Treatment of Post-Operative Nausea and Vomiting

The Rotherham NHS Foundation Trust

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Background

Post-operative nausea and vomiting (PONV) is a common complication following surgery, with between 30% and 80% of patients identifying PONV as a significant issue [1,2,3,4].

Apfel identified 4 key risk factors for PONV; female, non-smoker, previous history of PONV or motion sickness, and post-operative opioid analgesia. Apfel classed patients with 3 or 4 risk factors as high risk.

Apfel recommended a multimodal approach to preventing PONV. In our hospital a guideline was developed based on this approach, recommending 1 antiemetic per risk factor (table 1). Despite this guideline, data collection consistently identified that most anaesthetists only give 2 antiemetics.

In 2012 the Lead Pain Specialist Nurse undertook an acupuncture course where she developed an interest in the use of acupuncture for PONV.

Cochrane reviews in 2009⁵ and 2015⁷ and a review by Rowbotham 2005⁶, identified P6 acupuncture to be as effective as a single antiemetic agent (diagram 1).

Inspired by Sheffield Teaching Hospitals who were using a small, inexpensive Acupin in the P6 acupuncture point for PONV (diagram 2), we resolved to introduce and evaluate the use of this method in our practice, specifically in 2 high risk groups, patients having open Total Abdominal Hysterectomy (TAH), and Primary Hip and Knee Replacement.

Historical outcome data for these two groups is shown in table 2.

Method and Data Collection

All patients admitted for TAH or Primary Joint Replacement between April 2014 - March 2015 were offered an Acupin. Those who agreed to the procedure following informed consent, were included in the evaluation.

All patients in both groups had an Acupin inserted pre-operatively in the P6 point at the wrist. Acupins were inserted in the Theatre Admissions Unit (TAU) by a trained Pain Team Nurse. Patients were encouraged to gently stimulate the Acupin if they felt nauseous.

All patients received the standard anaesthetic technique for their surgery, which included Spinal Morphine and a General anaesthetic in the TAH group, and Spinal Diamorphine in the joint replacement group. All patients received the standard perioperative analgesic and antiemetic regimes employed in our Trust, including regular Ondansetron and as required Cyclizine post-operatively.

The data, collected by the In-Patient Pain Team, included: surgical procedure, anaesthetic technique and mode of analgesia. Quality of pain relief and incidence of PONV were assessed at 24 and 48 hours.

Acupins were removed on discharge or at 72 hours post-surgery whichever came first.

References

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- (4) Hains JJ. Acupuncture and antiemetics. *Neurosci Lett* 2004; 361: 258-261
- (5) Rowbotham CC. Recent advances in the non-pharmacological management of postoperative nausea and vomiting. *Br J Anaesth* 2005; 95: 77-82
- (6) Lee A, Fan LY (2009) Stimulation of the wrist acupuncture point P6 for preventing postoperative nausea and vomiting (Review) *The Cochrane Library* (Issue 2) <http://www.cochrane.org/revi>
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Apfel Score

Risk Factor	Points
Female	1
Non-smoker	1
Previous history of PONV or motion sickness	1
Post-operative opioid analgesia	1
Total	0-4

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Female	1
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Table 1

Diagram 1 - P6 Point



Diagram 2 Acupin



Historical PONV Outcome - Table 2

TAH Outcomes			Joint Replacement Outcomes		
Year	Method	PONV	Year	Method	PONV
Pre 2010	PCA Morphine + PCA Cyclizine	70%	Pre 2010	Spinal Diamorphine PCA Morphine + Regular Cyclizine	71%
2002	PCA Morphine + Regular Cyclizine	50%	2013	Spinal Diamorphine No PCA Regular Ondansetron	48%
2012	Spinal Morphine No PCA Regular Ondansetron	30%			

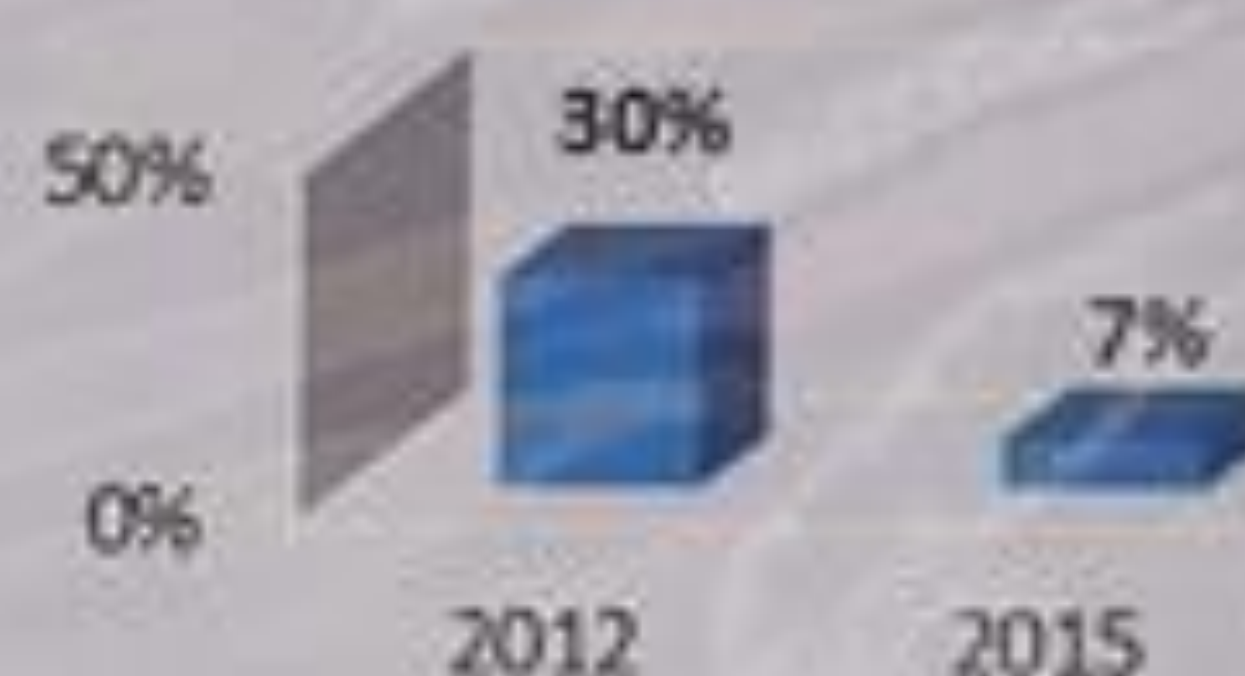
Results

A total of 80 patients were included in the review, 40 patients in each group. No problems arose with regard to the Acupin; no Acupins became dislodged, no irritation at the Acupin site was noted and no patient experienced paraesthesia.

As can clearly be seen from the tables below, the incidence of PONV was reduced significantly in both groups.

In the TAH group PONV reduced from 30% to 7% and in the joint replacement group from 48% to 18%.

TAH PONV



Joint PONV



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Discussion

Over the last 20 years the In-Patient Pain Service has strived to reduce PONV across all surgical specialities.

In 2010, the introduction of a guideline (table 1), showed a significant reduction in PONV when the guideline was followed. However, despite the guideline, data collection has consistently identified that most anaesthetists in our hospital only give 2 antiemetics. Why might that be? Perhaps it is a lack of awareness of the guideline, however a copy is prominently displayed in all anaesthetic rooms, and is included as part of induction for all new anaesthetic staff. Another possibility is a fear of increasing the risk of side effects and interactions when using multiple antiemetics. Using an Acupin offers the advantage of equivalence to a single antiemetic agent with none of the associated side effects or interactions; as a consequence the likelihood of patients with a high risk of PONV receiving the appropriate number of antiemetic interventions increases significantly.

One key consideration when implementing a new procedure is cost. In our hospital we use Cyclizine as our first line rescue antiemetic. A dose of Cyclizine costs £3.29 compared with £0.16 for an Acupin, this represents a 20 fold reduction in cost (20 Acupins costs the same as 1 dose of Cyclizine).

Using an Acupin offers a simple, effective, non-pharmacological method of delivering an additional antiemetic. The simple technique of inserting an Acupin is easily taught to nurses and other health care professionals.

Following this project, the nurses who work in TAU and our Day Surgery Unit became very enthusiastic and asked to be trained to insert the Acupins as part of their admissions process. A standard operating procedure and teaching package was introduced to facilitate this development. This has resulted in the vast majority of patients undergoing surgical procedures in our hospital being offered an Acupin.

Conclusions and Recommendations

Using Acupins for the prevention of PONV is a simple, inexpensive, technique which is readily accessible to qualified nurses and potentially other health care professionals.

We have demonstrated that Acupuncture using an Acupin inserted in the P6 acupuncture point appeared to be effective in reducing PONV in our small group of patients.

As a result of this project we have recommended that all patients undergoing surgical procedures are offered an Acupin preoperatively. We have developed a standard operating procedure for the use of Acupins for the prevention and treatment of PONV, and trained the Day Surgery and TAU nurses to insert them pre-operatively.