

# An audit of lidocaine spray and its use in endoscopy with particular attention to its ethanol content

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## Abstract

**Objective:** The aim was to investigate the attitude of patients about to undergo upper gastrointestinal endoscopy toward the use of an oral lidocaine spray which contained alcohol. **Materials and Method:** It is customary to offer patients about to undergo a gastroscopy intravenous sedation, an oral local anesthetic spray or a combination of both. However, the presence of alcohol within the oral spray is seldom discussed with patients. There are some religious groups, such as fundamentalist Christians and Muslims, who will only consider the use of alcohol in exceptional circumstances. There are also others who are reluctant to use it for a range of reasons. One hundred patients undergoing a diagnostic gastroscopy because of dyspeptic symptoms at the University Hospitals of Leicester were provided with an information sheet about sedation. Of the 100 patients asked to take part in the audit 25 were South Asian. Eleven of these patients were Muslim and 11 Hindu. **Results:** Fifteen patients declined to use the spray (13 Europeans and 2 South Asians). The reasons varied with only two doing so for religious reasons. One of the patients was a Muslim and the other a Christian. However, almost 90% of people believed all patients should be told of the alcohol content of the oral spray so as to allow them to make an informed choice. **Conclusion:** All patients who are to undergo an endoscopy should be told of the alcohol content of any oral anesthetic spray, so that they can make an informed choice as to whether they wish to receive it.

## Key words

Alcohol, endoscopy, lignocaine spray

## Introduction

It is customary to offer patients about to undergo a gastroscopy intravenous sedation, an oral local anesthetic spray or a combination of both. People's views on their value vary and the limitations imposed through use of intravenous sedation can mean that some people will elect either to use the oral spray or nothing. However, the presence of alcohol within the oral spray is seldom discussed with patients. There are some religious groups, who will only consider the

use of alcohol in exceptional circumstances. Traditionally, Muslims, Baptists, Salvationists, Brethren, Pentecostals and members of many other fundamentalist Christian groups have abstained completely from alcohol. Equally, Jains and Sikhs are not supposed to drink alcohol.

In a study from the USA, the issue of openness about the nature and source of products was investigated across a wide range of religious groups.<sup>[1]</sup> It became clear that knowledge of religious and social preferences assisted surgeons in obtaining a culturally sensitive informed consent for procedures. This study confirmed an earlier report of 4 patients from a range of religious backgrounds who had discontinued their medication because it conflicted with their beliefs.<sup>[2]</sup> An in-depth study of the attitudes of 21 physicians in Chicago suggested that they first sought to accommodate patients' ideas by remaining open-minded and flexible in their approach.<sup>[3]</sup> However, if they believed patients' religiously informed decisions would cause them to experience harm, they would make efforts to persuade patients to follow medical recommendations.

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However, patients “are not passive recipients of prescribing decisions; they have their own views which are a key influence on whether and how they take medications, and these must be respected.”<sup>[4]</sup>

Many endoscopy units serve multicultural societies in which people from a range of religious beliefs will be encountered. During gastroscopies, patients are often offered an oral anesthetic spray to assist with intubation and to limit oral discomfort during the test. Within the UK, all such products contain alcohol. Against this background, the purpose of this audit was specifically to investigate the attitude of an unselected patient group towards the use of such sprays. The thrust of the audit was to investigate whether endoscopists should be open about the nature of the spray rather than to use it surreptitiously. During the analysis, consideration was given to whether specific groups responded in the expected manner.

## Materials and Methods

One hundred patients undergoing a diagnostic gastroscopy because of dyspeptic symptoms at the University Hospitals of Leicester were provided with an information sheet about sedation and asked to complete an audit questionnaire about the use of oral lidocaine spray as an adjunct to the procedure [Table 1]. The leaflet described the role of the spray and its limitations. It clearly identified the benefits of the spray in the following terms:

“You will be less aware of the tube in your mouth during the test.”

In addition, it outlined the effects of the spray on when a patient would be able to eat and drink. The leaflet was designed to be easily read, and its readability scores would indicate that it was comparable to a TV guide and so accessible to people with limited reading capabilities [Table 2]. Patients were also provided with details of intravenous sedation and all patients were offered the choice of:

1. Intravenous sedation and oral lidocaine spray
2. Intravenous sedation alone
3. Oral lidocaine spray alone
4. Neither intravenous sedation nor oral lidocaine.

When patients chose not to have the spray (responses 2 or 4) note was made of the reasons for these choices. In addition, patients were asked to express an opinion as to whether all patients should be told of the four choices and whether they should be told of the alcohol (ethanol) content of the spray.

## Results

Of the 100 patients with dyspepsia who were asked to take part in the audit all agreed and completed the questionnaire 75 were European (30 women) and 25 South Asian (16 women). Of the South Asian patients, 11 were Muslim and 11 Hindu.

**Table 1: Audit of oral anesthesia in gastroscopy**

You will be offered a spray to numb the mouth and tongue. This means you will be less aware of the tube in your mouth during the test. The spray is made of lidocaine and alcohol. It has a banana flavor. If you have the spray you will not be able to eat or drink for 45 min after the test

You will also be offered an injection of a sedative. There is no alcohol in the injection. This will make you sleepy for the test

You can choose to have both the spray and the sedative. Some people choose just the spray. Other people choose just the sedative. Some people have neither for the test

Please tick “yes” for your choice	Yes
Which do you wish to have for your test	
Oral spray and sedative injection	<input type="checkbox"/>
Sedative injection alone	<input type="checkbox"/>
Spray alone	<input type="checkbox"/>
No spray and no injection	<input type="checkbox"/>
Do you believe patients should be told about all of the above 4 choices for this test?	<input type="checkbox"/>
Do you believe that all patients should be told that the oral spray contains alcohol?	<input type="checkbox"/>

**Table 2: Readability of information sheet and audit tool**

Readability indices	Score
Flesch Kincaid reading ease	85.8
Flesch Kincaid grade level	3.6
Gunning Fog score	6.6
SMOG index	5.3
Coleman Liau index	7.3
Automated readability index	1.7

SMOG=Simple measure of gobbledygook

There was no significant difference in age between the various groups who took part in the study [Table 3].

Ninety patients believed that all patients should be told of the four choices available to them. Eighty-seven believed that everyone should be told of the alcohol content of the lidocaine spray. Forty-six patients elected to have both intravenous sedation and oral spray for the procedure; 38 chose oral spray alone, 14 intravenous sedation alone and 2 elected to have neither.

Fifteen patients specifically declined to use the spray (13 Europeans and 2 South Asians). The reasons are given in Table 4. Those patients who elected not to have the lidocaine oral spray were significantly older, aged 69 years (Interquartile range 59-78) compared to 55 (Interquartile range 43-68) for those who chose to have a spray ( $t = 3.08$  two-sided  $P = 0.003$ ). The proportion of patients in the two cohorts who rejected the oral spray was not significantly different (8% for the Asian group and 17% for the European group) and this was true for both Hindus and Muslims. However, the two patients who rejected the spray on religious grounds both said that they would have been extremely annoyed if they had been given the spray and subsequently discovered that it contained alcohol.

**Table 3: Age of respondents to endoscopy survey**

Population group	Age (year SD; interquartile range)
English men	58.3 (SD±18; 44-73)
English women	61.5 (SD±19; 48-74)
Hindu men	48.5 (SD±8; 43-54)
Hindu women	56.0 (SD±6; 50-60)
Muslim men	34.5 (SD±14; 33-37)
Muslim women	49.6 (SD±15; 41-60)

SD=Standard deviation

**Table 4: Reasons for refusal of oral spray containing alcohol**

Reason	Number
It is ineffective or makes one's throat more sore	8
It interferes with my medication	2
Religious reasons	
Muslim	1
Christian	1
Alcohol worsens my disease	1
Allergic to banana flavoring	1
Did not wish to wait 45 min before being allowed to eat and drink	1

13 European and 2 South Asian patients declined the spray

## Discussion

Patients believe that they should be offered a range of approaches to their gastroscopy, and although 84% chose to have oral lignocaine, 87% of patients believed that everyone should be told of its alcohol content. Although this may appear anomalous, its basis lies in the fact that many patients were concerned for others for whom alcohol is forbidden. This may reflect the multicultural nature of the population in Leicester, which has a large South Asian population. In addition, the concept of patient choice is integral to the future practice of medicine. For example, when patients were offered choices about screening for colorectal cancer preferences varied across participants and was not predictable.<sup>[5]</sup> As a result, clinicians were encouraged to discuss the full range of tests. In addition, there is a legal precedent within the UK which preserves the right of patients to choose the less good option. It is now well recognized that decisions that are inconsistent with people's own preferences are also common.<sup>[6]</sup> In this audit the general consensus by patients was that all patients should be informed of the alcohol content of lidocaine spray. The reason behind this view was the general concern among patients that there should be provision for people who had religious or ethical concerns about the use of alcohol. However, of the 11 Muslims in the audit, only one elected not to have the spray and so the presumption made by the patient group as a whole was wrong. Nevertheless the general view was correct in that 15% of patients declined the spray because of its alcohol content but for unexpected reasons.

In fact, the ethanol content of lidocaine spray is 39-48%, but the amounts used in endoscopy are unlikely to have any central

nervous effects.<sup>[7]</sup> The role of lidocaine has been shown to have an additive beneficial effect on patient tolerance above that of midazolam sedation alone.<sup>[8-10]</sup> However, there are equally effective solid alternatives. Amethocaine or tetracaine lozenges have been shown to be directly comparable to lignocaine spray in gastroscopies performed in Hong Kong.<sup>[11]</sup> Their use in dentistry as "lollipops" have been shown to be effective at suppressing gag reflexes.<sup>[12]</sup> Unfortunately, these are not available in many clinical jurisdictions so limiting choice. Studies have also addressed other aspects of topical anesthetic sprays such as taste, which many find unpleasant.<sup>[13]</sup> Clearly there is a need for effective alternatives to oral lignocaine and indeed, a need to address the inadequacy of flavorings that are used. Strepsil Dual Anesthetic lozenges achieved a better taste experience but were less effective in achieving numbness and reduced gag reflex.<sup>[14]</sup>

## Conclusion

A significant number of patients will decline use of an oral anesthetic spray during endoscopy. There is a range of reasons, of which previous experience of its effect or lack of benefit is the most important. Only 2% of the study group rejected the spray for religious reasons, and this was the case for <10% of Muslims. Clearly our preconceptions as to how people will respond to the issue of alcohol in medications can be wrong, but the study demonstrated that the vast majority of patients (87%) believe that we should provide patients with this information so that they can make their own informed choice.<sup>[15]</sup> As long ago as 1991 studies on patient choice about oral anesthetic spray clearly identified the patient as the central agent.<sup>[16]</sup> If patients are to have a positive experience of their gastroscopy it is critical that they are told of the alcohol content of the oral spray and offered a choice as to its use.

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## References

- Jenkins ED, Yip M, Melman L, Frisella MM, Matthews BD. Informed consent: Cultural and religious issues associated with the use of allogeneic and xenogeneic mesh products. *J Am Coll Surg* 2010;210:402-10.
- Sattar SP, Shakeel Ahmed M, Majeed F, Petty F. Inert medication ingredients causing nonadherence due to religious beliefs. *Ann Pharmacother* 2004;38:621-4.
- Curlin FA, Roach CJ, Gorawara-Bhat R, Lantos JD, Chin MH. When patients choose faith over medicine: Physician perspectives on religiously related conflict in the medical encounter. *Arch Intern Med* 2005;165:88-91.
- Gatrad AR, Mynors G, Hunt P, Sheikh A. Patient choice in medicine taking: Religious sensitivities must be respected. *Arch Dis Child* 2005;90:983-4.
- Shokar NK, Carlson CA, Weller SC. Informed decision making changes test preferences for colorectal cancer screening in a diverse population. *Ann Fam Med* 2010;8:141-50.

6. Ubel PA. Is information always a good thing? Helping patients make “good” decisions. *Med Care* 2002;40:V39-44.
7. Lidocaine 10% W/W Local Anaesthetic SPRAY PL 20165/0009 UKPAR. Available from: <http://www.mhra.gov.uk/home/groups/l-unit1/documents/websitesources/con2033475.pdf>. [Last accessed on 2013 Aug 18].
8. Smith JL, Opekun A, Graham DY. Controlled comparison of topical anesthetic agents in flexible upper gastrointestinal endoscopy. *Gastrointest Endosc* 1985;31:255-8.
9. Froehlich F, Schwizer W, Thorens J, Köhler M, Gonvers JJ, Fried M. Conscious sedation for gastroscopy: Patient tolerance and cardiorespiratory parameters. *Gastroenterology* 1995;108:697-704.
10. Leitch DG, Wicks J, el Beshir OA, Ali SA, Chaudhury BK. Topical anesthesia with 50 mg of lidocaine spray facilitates upper gastrointestinal endoscopy. *Gastrointest Endosc* 1993;39:384-7.
11. Wong KF, Leung SK, Lau KW. A randomised controlled trial to compare the efficacy of xylocaine spray and amethocaine lozenge in preparing patients for oesophago-gastro-duodenoscopy (OGD). *Ann Coll Surg Hong Kong* 2004;8:A8.
12. Muller G Rph, Case T Dds, Deen GL Dds. Tetracaine lollipops for the suppression of extreme gag reflex in dental patients. *Int J Pharm Compd* 2010;14:395-99.
13. Asante MA, Northfield TC. Variation in taste of topical lignocaine anaesthesia for gastroscopy. *Aliment Pharmacol Ther* 1998;12:685-6.
14. Chan CK, Fok KL, Poon CM. Flavored anesthetic lozenge versus xylocaine spray used as topical pharyngeal anesthesia for unsedated esophagogastroduodenoscopy: A randomized placebo-controlled trial. *Surg Endosc* 2010;24:897-901.
15. Pereira S, Hussaini SH, Hanson PJ, Wilkinson ML, Sladen GE. Informed consent for upper gastrointestinal endoscopy. *J R Coll Physicians (Lond)* 1994;28:411-4.
16. Probert CS, Jayanthi V, Quinn J, Mayberry JF. Information requirements and sedation preferences of patients undergoing endoscopy of the upper gastrointestinal tract. *Endoscopy* 1991;23:218-9.

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