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EDITORIALS:

Andrew Hartle and Surbhi Malhotra

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The safety of propofol

BMJ 2009; 339: b4024 [Full text]

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▼ Use of propofol

Aruni Sen (27 October 2009)

▼ Propofol maybe too widely available outside appropriate hospital environments

Amit Patel (27 October 2009)

▼ More about the safety of propofol

Anne Roussin, Jean-Louis Montastruc and Maryse Lapeyre-Mestre (2 February 2010)

Use of propofol

27 October 2009



Aruni Sen,
Consultant in Emergency
Medicine
Wrexham Maelor Hospital,
LL13 7TD

Send response to
journal:

Re: Use of propofol

Sir, The authors correctly point out the remarkable benefits of Propofol in current anaesthetic practice and reassure us of its limited abuse potential.

Unfortunaely, in doing so, they incorrectly state that the drug is only safe when used "by the right people" - in the authors opinion this equates to anaesthetists and intensivists.

They leave out the whole body of emergency medicine specialists who use Propofol widely for procedural sedation with equal success and safety profile. Its 4-hour compliant nature (short duration) makes it popular even with managers!

They claim that its "use by non-anesthetists is contentious" while the evidence base of its successful and safe use in emergency medicine is extensive. Our own experience supports very good use of Propofol in procedural sedation. However, this often attracts uninformed criticism by many non EM colleagues who actually do not have comparable experience in its use for procedural sedation in emergency medicine setting, as compared to GA, and yet maintain their antiquated reservations. Perhaps it would be timely to appreciate that the world of (non- anaesthetic) emergency

medicine is changing.

Competing interests: None declared

Propofol maybe too widely available outside appropriate hospital environments

27 October
2009



Amit Patel,
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Send response to
journal:

Re: Propofol maybe to
o widely available outsi
de appropriate hospital
environments

The excellent editorial by Hartle and Malhotra[1] is both timely and insightful, supporting the continued appropriate use of propofol by trained healthcare professionals in suitable hospital environments. Further to the single lay person case of propofol abuse suggested, another case of a 21-year-old man in Germany who had purchased the drug from eBay exists, where he self-administered several daily doses through a cannula.[2]

Propofol abuse in healthcare workers other than the nurse and anaesthetist examples presented[1] are also reported. Outside the hospital setting a GP injected propofol on a daily basis for ten months, where mild euphoria with almost no withdrawal effects were found.[3] A hospital physician abusing propofol reported intense craving.[4] However, despite these reports of addictive behaviour a prospective double-blind randomized placebo-controlled crossover study in healthy volunteers using escalating low dose propofol (0.08 mg/kg loading dose and 0.5 mg.kg-1.h-1 infusion; 0.16 mg/kg loading dose and 1.0 mg.kg-1.h-1 infusion; 0.32 mg/kg loading dose and 2.0 mg.kg-1.h-1 infusion) did not demonstrate addictive behaviour.[5] Therefore propofol availability outside hospital anaesthetic and intensive care environments should be restricted and sale to individuals over the internet should not be permitted in any country.

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[1] Hartle A, Malhotra S. The safety of propofol. *BMJ* 2009;339:b4024

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Competing interests: None declared

More about the safety of propofol

2 February 2010



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Jean-Louis Montastruc and
Maryse Lapeyre-Mestre

Send response to

journal:

Re: More about the safety of propofol

Recently, Andrew Hartle and Surbhi Malhotra have addressed the question of propofol safety.[1] We agree with their conclusion that propofol is a safe drug when it is correctly administered in a medical setting. However, it should not be occulted that both pharmacodynamic and clinical data have established the potential for diversion, abuse and dependence (addiction) on propofol.

Based on the very few number of case reports of abuse and addiction to propofol published to date, they conclude that the potential of propofol for being voluntarily used for other aims than its therapeutical indications is low. However, even if this number is low, in most of these published case reports, abuse and dependence on propofol were serious. Death was reported in six of the twelve cases referenced in Medline between 1992 and 2009. When the reason of the death has been investigated, it was found not related to an overdose, but to the rapidity of injection without ventilatory assistance, which induced apnoea and consecutive fatal respiratory depression. In most of the published case reports, abuse or addiction concerned healthcare professionals. This is not surprising since healthcare professionals can both have access to information about the pleasant subjective effects of propofol (which have been demonstrated in clinical trials with healthy volunteers)[2-3]and obtain this drug more easily than the general population.

In addition to clinical observations, the potential for abuse and dependence on a drug can be determined on the basis of pharmacodynamic preclinical data. Various pharmacological tests performed on animals are suitable to predict a problematic use of psychoactive drugs in human. In the case of propofol, these experimental studies performed on animals strongly suggest a real potential for abuse, which could be expected in human. Therefore, in addition to clinical

observations, pharmacodynamic data obtained both in animal and human highlight the potential for diversion, abuse and dependence on propofol.[4]

Michael Jackson had a problematic use of propofol and of other substances of abuse. As for other drugs of abuse, such as opioids, risks of addiction to propofol should be mentioned. The potential for diversion, abuse and dependence on propofol should be known by persons starting propofol use for diversion purpose, since it is associated to an increased risk of death when administration is not performed in a context of ventilatory assistance.

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[1]Hartle A, Malhotra S. The safety of propofol. *BMJ* 2009;339:b4024.

[2]Zacny JP, Lichtor JL, Zaragoza JG, Coalson DW, Uitvlugt AM, Flemming DC, Binstock WB, Cutter T, Apfelbaum JL. Assessing the behavioral effects and abuse potential of propofol bolus injections in healthy volunteers. *Drug and Alcohol Depend* 1993;32:45-57.

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Competing interests: None declared