Pediatric anesthesia outside of the operating room: a survey of current practice in Belgian hospitals.

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Introduction:

Anesthesia for gastro-intestinal, radiological and other procedures outside of the operating room for pediatric patients is a fast growing division of medical service. However, there is a growing concern that general anesthetics may cause neurotoxic changes in the developing brain that lead to adverse neurodevelopmental outcomes later in life . Moreover, occupational exposure to waste anesthetic gases (WAG's) has been associated with a broad spectrum of adverse health outcomes, ranging from Parkinson's disease to teratogenicity and congenital anomalies. Thus, we conducted a survey of the current use of intravenous and volatile anesthetics and gas scavenging systems outside of the operating room for pediatric anesthesia in Belgian hospitals.

Methods:

In May 2015, the chairmen of all 94 departments of anesthesia in Belgium were invited by email to participate in the presented survey. Reminders were sent to non-responders weekly (4 times).The remaining non-responders were contacted one last time by post with a written questionnaire identical to the online survey. Descriptive statistics were used to summarize numeric responses.

Results:

During the period May 2015 – October 2015, responses were received from 71 departments (response rate 75,5%). Procedures under general anesthesia in pediatric patients outside of the operating room are performed in 43 responding hospitals (60,5%). Volatile anesthetics (sevoflurane and/or N₂O) were used outside of the operating room in 33 responding hospitals (46,5%). Gas scavenging systems connected to the breathing system outside of the operating room were only available in 6 of these hospitals (18%).

	Amount	Percentage
Invited hospitals to the survey	94	
Hospitals that responded the survey	71	75,5%
Volatile anesthetics (sevoflurane and N ₂ O) used outside the OR	33	46,5%
Gas scavenging systems were used outside of the operating room	6	18,0%
<i>Hospitals where nitrous oxide was used by non-anesthesiologists</i>	46	65,0%
Volatile anesthetics were definitely administered with a gas scavenging system	5	11,0%
Volatile anesthetics were not administered with a gas scavenging system	33	71,5%
Hospitals where the data was missing	8	17,5%

In 46 hospitals (65%), nitrous oxide/oxygen sedation is utilized by non-anesthesiologists. In only 5 hospitals (11%), these gas mixtures are definitely administered with a gas scavenging system connected to the breathing system. In 8 hospitals (17,5%), data are missing and in 33 hospitals (71,5%), these gas mixtures are not administered with a gas scavenging system connected to the breathing system.

Conclusion:

Apparently, pediatric procedures under general anesthesia are also in Belgium increasingly performed outside of the operating room. More importantly, occupational exposure to waste anesthetic gases (WAG's) outside of the operating room is a huge health risk in Belgian hospitals.

References:

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