



Public awareness of the bone morphogenic protein controversy - lessons learned from news publications

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Introduction

Use of recombinant human bone morphogenic protein-2 (rhBMP-2) in spinal fusion has increased. Public awareness of rhBMP-2 complications has not been assessed. In this paper, we analyzed the information provided to the public about this bone graft substitute by the news media.

Methods

We utilized the academic database, LexisNexis, which locates news articles in newspapers and news magazines. All articles were coded by a coder and reviewed by the principal investigator.

Results

Our search identified 186 newspaper articles (87 national, 99 local) published between January 2001 and July 2013. Headline topics ranged from medical(35%), financial(28%), to legal(26%). Fifty(59%) national and 35(54%) local articles contained no mention of complications. Complications mentioned in national newspapers included cancer(24%), retrograde ejaculation(24%) and abnormal bone growth(14%). Local newspapers cited cancer(14%), inflammation(14%) and retrograde ejaculation(9.2%) most frequently. Other described complications included excessive bone growth, airway problems, bone loss, infection, and pain. Articles mentioned BMP usage in the lumbar (32%) and cervical (26%) spine. Sources of evidence cited or quoted were (in order of frequency):governmental agencies, medical research or published studies, healthcare personnel or patients, companies.

Conclusions

Only a small percentage of published articles presented comprehensive information on the numerous potential complications. Despite the lack of a clear scientific causal relationship between rhBMP-2 and cancer, the risk for cancer was disproportionately reported with some not citing scientific references. The lack of reliable information publicly available makes it important for physicians to discuss the risks and benefits of using BMP in spinal surgery, so patients can make an informed decision. More news media articles are needed which present risks and complications in an impartial and evidence-based manner. Advocacy groups and medical institutions with media outlets might be useful in helping to achieve this goal.

Table 1: Complications mentioned in major national U.S. newspapers	
Complication Mentioned	Frequency (%)*
Cancer	20 (24)
Retrograde Ejaculation	20 (24)
Excessive Bone Growth	12 (14)
Infection	7 (8.2)
Inflammation	5 (5.8)
Airway	5 (5.8)
Pain	3 (3.5)
Bladder Dysfunction	3 (3.5)
Bone Loss	0 (0.0)
No Complications Mentioned	50 (59)

Table 2: Complications mentioned in local U.S. newspapers	
Complication Mentioned	Frequency (%)*
Cancer	9 (14)
Inflammation	9 (14)
Retrograde Ejaculation	6 (9.2)
Pain	5 (7.7)
Excessive Bone Growth	5 (7.7)
Infection	4 (6.2)
Airway	4 (6.2)
Bone Loss	3 (4.6)
Bladder Dysfunction	0 (0.0)
No Complications Mentioned	35 (54)