

Can families believe the accuracy of websites' information regarding COVID-19 vaccines' side effects?

BACKGROUND

COVID-19 has a substantial mortality, particularly among the elderly. Vaccination substantially reduces this mortality for adults. Vaccines' side effects include rare events such as thrombotic events and myocarditis. As children and young people are at a substantially lower risk of mortality/severe disease from COVID-19, the risk-benefit ratio for vaccination is less advantageous in this age group. On 4 August 2021, the Joint Committee on Vaccination and Immunisation advised that all teenagers 16–17 years old in the UK should be offered the Pfizer-BioNTech vaccine. Subsequently, on purely medical grounds, they did not recommend vaccinating children 12–16 years old routinely.¹ After consultation on the wider benefits of maintaining schooling and aiding children's mental health, the U.K.'s Chief Medical Officers have recommended (13 September 2021) that the Pfizer-BioNTech vaccine be offered to children aged 12–15. The RCPCH has cautiously endorsed this development as part of a wider package to maintain children's schooling and health.² Currently, the UK has four licensed COVID-19 vaccines (Oxford/AstraZeneca, Johnson & Johnson, Pfizer/BioNTech and Moderna).³ All have potential side effects. Thus, it is important that teenagers and their families are well informed about the balance between the benefits and genuine side effects of vaccination, while avoiding misinformation. Other than healthcare professionals and families/friends, the internet is the major source of such information.

AIMS

To review the accuracy of purported COVID-19 vaccine side effects listed on websites.

METHODS

Side effects of the COVID-19 vaccines listed in the BNF were combined with those in each of the four manufacturers' patient information leaflets to create a comprehensive "Gold Standard" list of 'correct' side effects. These included myocarditis

Table 1 Search engine and percentage incidence of hits including at least one 'extra' side effect when compared with the combined "Gold Standard" list

	AOL	DuckDuckGo	Yahoo	Ask	Ecosia	Dogpile	Bing	Google	Yandex	Mean average
Hit incidence per 10 websites	30%	30%	20%	40%	10%	10%	10%	20%	30%	22.2%

Table 2 Search engine and incidence of 'extra' side effects when compared with the combined "Gold Standard" list

	AOL	DuckDuckGo	Yahoo	Ask	Ecosia	Dogpile	Bing	Google	Yandex	Total
Total (mean per 10 websites)	5 (0.5)	5 (0.5)	3 (0.3)	13 (1.3)	2 (0.2)	2 (0.2)	3 (0.3)	7 (0.7)	15 (1.5)	55

and thrombosis. For simplicity, we did not specify which vaccine had which specific side-effect profile, as websites do not differentiate individual vaccines. Online websites' statements were then compared with this list for accuracy. The first 10 websites found on each of nine different search engines were evaluated.

RESULTS

From the 10 top hits found in each of 9 search engines, 44 unique websites from a possible 90 were identified. Of these, 33 sites (75%) documented only side effects found in the "Gold Standard" list of side effects collated for this study. A quarter (11/44) document at least one side effect that does not appear in the "Gold Standard" list. Ecosia, Dogpile and Bing were the most accurate engines, with only 10% in each having a website listing unrecognised side effects. Ask.com documented the highest percentage of hits containing at least one unrecognised side effect—40% (table 1). A total incidence of 55 'extra' side effects were recorded (table 2).

CONCLUSIONS

The COVID-19 immunisation plan, and its recent extension to include older children, makes it important that families are provided with reliable, accessible information. Additional rare side effects may still be discovered in the future, but probably will not substantially affect family's perceptions. Most easily accessible websites contain reasonably accurate information about COVID-19 vaccine side effects. However, some contain unsubstantiated side effects which could adversely affect the decision of those trying to make informed vaccination choices.

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