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Correspondence

Incomplete reporting of research in press releases: Et tu, WHO?

Sir,

Press releases represent the public face of science and research, reporting and interpreting the finding of medical research. Yet, this public face has come under scruting, since many have pointed out that press releases may not provide key facts or acknowledge important study limitations[1,2]. Rigid peer evaluation of research methods and reporting in scientific journals can be negated by misrepresentation of those facts to the public. We were made aware of this recently in the context of the debate about introducing Hib vaccination in India, when a press release reporting the internationally funded Bangladesh Hib Probe Study[3,4], was quoted rather than the study itself[5]. On the face of it, this press release issued by a number of international agencies sponsoring the research, seems to selectively report the study findings.

Referring to the research[5], the press release stated: (*i*) "Results showed that routine immunization of infants with a Hib conjugate vaccine prevented over one-third of life-threatening pneumonia cases and approximately 90 per cent of Hib meningitis cases"; and (*ii*) "This vaccine study builds on the evidence of the real burden of Hib pneumonia … shown in …Indonesia."

Both these statements argue in favour of Hib vaccination in developing countries, yet the press release reflects selective interpretation/presentation of the actual research findings.

The Bangladesh study compared Hib vaccination status among children with confirmed pneumonia or meningitis (cases), against those without these diseases (controls). Two groups of children constituted controls *viz.,* community based controls (matched for age, sex, season and distance from the hospital) and hospital-based controls with no matching. A total of 93.4 per cent children received all 3 doses of Hib-DPT or DPT vaccine as per protocol. The numbers that received fewer than 3 doses was relatively small.

The major findings of the Bangladesh study were as follows: (*i*) There was no difference in the Hib vaccination status of children with pneumonia compared to community controls, irrespective of how radiological pneumonia was defined. The authors reported differences in the vaccination status of children attending the hospital for other diseases, compared to those referred to the hospital with pneumonia for the purposes of this study [Vaccine effectiveness 39% (CI 14 to 56) per protocol]. The fact that there was no difference in the matched community controls was omitted in the press release; and (*ii*) The study found only 15 cases of confirmed Hib meningitis and 41 'probable meningitis'. Among those who received all 3 doses of vaccine there was no statistically significant protective effect against either confirmed meningitis or probable meningitis, irrespective of comparison with hospital or community controls. The authors observed statistical significance in the sub-group that received only two dose of vaccine [Vaccine effectiveness for confirmed meningitis based on hospital controls 93% (CI 53 to 100)]. This point was highlighted in the press release in a manner suggesting benefit of the vaccine, without mentioning that no significant difference was found with three doses of vaccine.

The press release also stated that the study 'builds on' evidence of the burden of Hib pneumonia from Indonesia which is another misrepresentation. The Indonesia study[6] actually reported more pneumonia (though not statistically significant) in the Hib vaccinated group than controls. In fact, the Indonesia study paper concludes by saying "Hib vaccine will not have a major role in efforts to reduce the overall burden of respiratory illness….. as improvements in nutritional status, maternal education and socioeconomic status" (can have)[5]. Paradoxically the press release, that the

Table 1. Summary of the Bangladesh case-control and Indonesia Hib probe study results

Bangladesh case-control study	Vaccine effectiveness (%) for meningitis after 3 doses	Confirmed Hib meningitis (n = 15)	Community control	65% (CI -190 to 100)
			Hospital control	86% (95% CI -8 to 100)
		Probable meningitis (n = 41)	Community control	40% (95% CI -138 to 85)
			Hospital control	74% (95% CI -30 to 95)
	Vaccine effectiveness (%) for pneumonia after 3 doses (Against community controls)	Pneumonia	Pneumonia (per protocol readings) (n = 475)	20% (95% CI -10 to 43)
			Pneumonia (WHO readings) (n = 675)	16% (95% CI -11 to 37)
			Pneumonia (Confirmed by both groups) (n = 343)	32% (95% CI -2 to 54)
Indonesia probe study	Vaccine preventable morbidity/mortality per 10^5 child-years	After 3 doses of vaccine	Death	30 (95% CI -201 to 261)
			Radiological pneumonia (WHO criteria)	-89 (95% CI -248 to 71)
			Microbiologically confirmed Hib meningitis	20 (95% CI -0.42 to 40)
			Meningitis admission	36 (95% CI -85 to 157)
		After 1 dose of vaccine	Death	59 (95% CI -249 to 367)
			Radiological pneumonia (WHO criteria)	-43 (95% CI -185 to 98)
			Microbiologically confirmed Hib meningitis	16 (95% CI 1.4 to 31)
			Meningitis admission	87 (95% CI -15 to 189)

Bangladesh study 'builds on' the evidence of the Indonesian study, is true. They both actually argue against the vaccine.

The Table summarizes the key findings of both studies[5,6]. Health-care stakeholders, decision-makers and the lay public in developing countries need to be cognizant of selective reporting bias when confronted with information from press releases. International organization should ensure balanced reporting of research through the media.

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