Whooping cough vaccine trade-offs: newer but less effective

By ACSH Staff — May 20, 2013

According to reports by the CDC, 2012 saw the worst whooping cough outbreak since 1959, with 18,000 cases of the disease by July. And a new study shows that the newer acellular vaccines may be to blame, at least to some extent. Researchers found that the older, whole-cell whooping cough vaccine was more protective than the newer vaccines.

Dr. Nicola Klein and colleagues at the Kaiser Permanente Vaccine Study Center used data from the 2010 to 2011 whooping cough outbreak in California and looked at about 1000 children ages 10 through 17 years, who had received four pertussis-containing vaccines by age 2. Of those children, 138 had tested positive for whooping cough during this period. Researchers found that those children who had received only the newer, acellular vaccines were six times as likely to get whooping cough compared to the children who received the older, whole-cell whooping cough vaccine was more protective than the newer vaccines.

The reason that the switch was made to the newer version of the vaccine was because the older version resulted in side effects such as fever, swelling, local pain and short-term behavioral problems. Although the acellular version does not result in these side effects nearly as often, the trade-off is that protection against whooping cough does not last as long.

Dr. Klein adds, Whether the public would want to return to the whole-cell vaccine is an open question, but the findings raise the question of whether it might be worthwhile to try to tweak the acellular medication to improve its longevity.

ACSH s Dr. Gilbert Ross agreed with Dr. Klein: Clearly the newer acellular vaccine comes with trade-offs, which were largely unanticipated when introduced a decade or so ago. The older vaccine had what seemed to be an unacceptably high rate of adverse effects, especially when compared to the other childhood vaccines, although the effects were not severe. But the current state of affairs is also unacceptable. The best solution would seem to be getting teens and young adults vaccinated with a DTaP booster, since tweaking the new vaccine to lengthen its effective period sounds like a major effort. Reverting to the old vaccine is still worth considering as well, given the extent of the recent whooping cough epidemics, which have taken the lives of over one-hundred infants in recent years, 13 last year alone.