

LETTER TO EDITOR

Managing risk of Reye's syndrome in children on long-term Aspirin treatment

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Reye's syndrome is a rare but serious condition resulting in microvesicular hepatic steatosis (fatty liver) and encephalopathy. It primarily affects children and teenagers recovering from viral illness most commonly varicella zoster and influenza virus. Disease severity and progression may vary. In some cases, it may progress rapidly from mild to severe disease leading to encephalopathy, cerebral edema, liver failure and death. There also appears to be an association between aspirin and Reye's syndrome [1–3]. The incidence of this disorder has dramatically decreased after reduction in the use of aspirin in children. However, certain conditions such as Kawasaki disease, post-operative complex cardiac conditions and hypercoagulable states need long term low dose aspirin and are prone to complications with viral illness. Such children would benefit from vaccination against chickenpox and influenza but that also has its own risks.

A 2.5-year-old girl on long-term aspirin treatment initiated by the regional unit for Kawasaki disease developed fever and vesicular rash. Chicken pox was considered as differential diagnosis and management options were considered in light of the above summary.

We had rounds of discussions with regional cardiac centers and an immunologist. We found that there were differing practices, which can be broadly summarized as follows. For acute presentation with a rash or close contact with varicella: (1) continue with a low dose of aspirin with close monitoring; (2) Confirm the diagnosis of chickenpox, stop aspirin and use dipyridamole or clopidogrel for six weeks. For elective preventative care one should check immune status for varicella and, if susceptible, plan vaccination and (a) continue aspirin or (b) stop aspirin

and use dipyridamole or clopidogrel for the duration of the vaccination – one week before the first dose to six weeks after the second dose.

We performed a literature review to formulate a plan for our patient. The evidence for an association between aspirin and influenza/varicella virus infection with Reye's syndrome is based on epidemiological research and surveillance report. The incidence of Reye's syndrome has declined significantly after Centers for Disease Control (CDC) banned the routine use of aspirin in children. There is no clear evidence on the safety of low dose aspirin and risk of Reye's syndrome following viral illness. In view of high risk of mortality, it would be prudent to stop aspirin and replace it with another antiplatelet agent prior to vaccination or close contact with chicken pox/influenza, and monitor closely for development of Reye's syndrome.

We did not find any specific guidance in The Green Book [1] for children under 16. We found the following statement in the guidance provided by the CDC [2]: “Take caution when vaccinating children who are receiving salicylates. However, no adverse reactions have been reported.” Our patient was not immune to chickenpox and was vaccinated. Aspirin was continued.

Patients who are on long-term aspirin treatment could do better by following a plan to reduce the risk of flu. Currently, children are offered a single-dose intranasal live attenuated vaccine. The SPC of this vaccine makes it clear that it is contraindicated in patients on long-term aspirin treatment. There is a risk that some of these children may present to an acute pediatric setting following inadvertent vaccination with nasal

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vaccine and it will be useful to have a clear plan on continuation of the use of aspirin. Ideally, children on long-term aspirin treatment should receive yearly inactive flu vaccine.

Key message

- Develop an understanding of the risks involved for children on long-term aspirin treatment with varicella and influenza infection, as well as the risks of immunization. It would be useful to have guidelines in place to manage this situation.
- Parents/caregivers should be counseled about this risk when their children are prescribed aspirin and take appropriate measures to contact a health care facility.
- All children with long-term aspirin treatment and with an unclear history of chickenpox should be screened for varicella immunity. If indicated, they should receive varicella vaccine on a priority basis. All these children should also receive yearly intramuscular inactivated influenza vaccine.

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