Lifesaving benefits of ORS and zinc

Diarrhea remains the second leading infectious cause of childhood mortality, responsible for about nine percent, or an estimated half a million deaths in young children worldwide. An overwhelming majority of those deaths occur in South Asia and sub-Saharan Africa.

Low-osmolarity oral rehydration salts (ORS) and zinc sulfate tablets (zinc) are key to managing diarrheal disease and drastically reducing childhood mortality and morbidity. The use of both therapies has been demonstrated to significantly reduce the duration and severity of diarrheal episodes, and prevent future episodes. In a review of 157 studies, use of ORS had treatment failure rate of only 0.2%, and was found to have reduced diarrhea-specific mortality by 69%.1 Zinc supplementation as an adjunct therapy has been shown to decrease mortality or treatment failure by 40% and the duration of diarrhea by 25%, as well as provide subsequent protection from recurrence in the two to three months following treatment.2,3,4

Increasing access to ORS and zinc

Diarrhea remains the second leading infectious cause of childhood mortality, responsible for about nine percent, or an estimated half a million deaths in young children worldwide. An overwhelming majority of those deaths occur in South Asia and sub-Saharan Africa.

Low-osmolarity oral rehydration salts (ORS) and zinc sulfate tablets (zinc) are key to managing diarrheal disease and drastically reducing childhood mortality and morbidity. The use of both therapies has been demonstrated to significantly reduce the duration and severity of diarrheal episodes, and prevent future episodes. In a review of 157 studies, use of ORS had treatment failure rate of only 0.2%, and was found to have reduced diarrhea-specific mortality by 69%.1 Zinc supplementation as an adjunct therapy has been shown to decrease mortality or treatment failure by 40% and the duration of diarrhea by 25%, as well as provide subsequent protection from recurrence in the two to three months following treatment.2,3,4

Increasing access through normative policy change

Current global guidance

Both ORS and zinc are currently listed separately in the gastrointestinal medicines category on the World Health Organization (WHO) Model List of Essential Medicines (EML) and EML for Children (EMLc).1

Current WHO and United Nations Children’s Fund (UNICEF) treatment guidelines for the management of childhood diarrhea, released in 2004, recommend the use of both ORS and zinc. There are numerous additional guidance documents from national and international associations that recommend or include the use of both ORS and zinc as co-therapy for diarrhea, particularly in children younger than five years of age.

To date, no formal normative guidance related to co-packaging of ORS and zinc exists, which leads to a number of barriers impeding access, including national-level policy and procurement challenges.

Application to the WHO EML Secretariat

A listing for both products co-packaged as a single item would support the long-standing WHO/UNICEF recommendation for co-administration of ORS and zinc, and have a number of public health benefits.

In November 2018, PATH and other members of Diarrhea Innovations Group (DIG)—a global coalition of innovators committed to reducing global burden of diarrhea—submitted an application to the WHO EML Secretariat for the addition of co-packaged ORS and zinc, as an individual listing, on the core EMLc.5

In addition to having ORS and zinc listed individually, the addition of a co-packaged listing has the potential to reinforce the lifesaving benefits of ORS and zinc in managing childhood diarrhea.

---

1 The listing for zinc includes the following note: “In acute diarrhea, zinc sulfate should be used as an adjunct to oral rehydration salts”.
2 This collaboration was initiated by a United Kingdom non-profit ColaLife under their Globalizer Programme.
diarrhea as a cornerstone for all health care systems involved in diarrhea management. This inclusion would also help achieve harmonization with the long-standing recommendation around the use of both therapies. Subsequently, it may clarify and stimulate country-level policy work to prioritize access to this treatment and lead to an increased coverage in regions where it is needed most.

Decisions related to the application will be made during the 22nd Expert Committee meeting in Geneva WHO Headquarters on 1-5 April 2019. Application, now open for public comment, can be accessed here: http://www.who.int/selection_medicines/committees/expert/22/or_s-zinc/en/.

Table 1. Proposed listing for co-packaged oral rehydration salts and zinc sulfate.

<table>
<thead>
<tr>
<th>17.5 Medicines used in diarrhea</th>
<th>Powder for dilution (see section 17.5.1) – Solid oral dosage form (see section 17.5.2)</th>
</tr>
</thead>
</table>

Expected benefits

A number of significant public health benefits from introduction of co-packaged ORS and zinc have already been demonstrated, including:

- Increased uptake and coverage of ORS and zinc (as a combination therapy and as individual components).
- Improved adherence to the combined therapy of ORS and zinc.
- Improved adherence to/preparation of individual components as a result of improved packaging (e.g. correct concentration of prepared ORS, completion of a full course of zinc).
- Improved dispensing practices by health care workers.
- Reduced hospitalization due to diarrhea.
- Reductions in inappropriate antibiotic prescribing and use.
- Enhanced satisfaction levels by caregivers of ORS and zinc relative to status quo products.
- Enhanced opportunities for developing private-sector models and leveraging value chains to improve availability and access closer to the household level.

Additional benefits of EML listing would include:

- **A cascade effect.** Global treatment guidelines and the essential medicines listings serve as important guides for countries in their development of national EMLs (NEMLS) and procurement and supply of medicines for donation and local medicine production, as well as training of health care providers. Listing of co-packaged ORS and zinc has the potential to foster an enabling environment for country-level policy work to prioritize access to treatment and incorporate ORS and zinc co-therapy into national health programs.

- **An awareness effect.** WHO EML listing stands to increase recognition and reinforcement among policymakers and health care professionals of co-administered ORS and zinc as a cornerstone of childhood diarrheal treatment worldwide.

Availability effect.** Listing of a co-packaged product can guide the selection, procurement, and supply of medicines in the public sector, schemes that reimburse medicine costs, and medicine donations, from the national level down to provincial/regional and district levels within countries.

A manufacturer effect. The listing may catalyze increased demand and spur local medicine production, with manufacturers responding and creating more market competition.

For more information on this initiative, or to learn how you can support this effort, please contact Elena Pantjushenko epantjushenko@path.org or drugdev@path.org.

Learn more about DIG - https://www.defeatdd.org/other/diarrhea-innovations-group.