Helping Families Take a Bite
out of overwhelming medical costs

Biologic Medications and Subsequent Entry Biologics

What should I know?

For a parent of a child with a serious illness, life can seem to revolve around watching for symptoms, administering medications, managing doctor and clinic appointments, dealing with the stress of medical costs, all while supporting your child to live with dignity and hope for the future. As treatments become more complicated and specialized, a growing part of the role of parents is sifting through information about new treatments, and understanding the best options for your loved one.

For some children with serious illness the most effective treatments come in the form of a biologic medication. These medications are made in living cells through a complex and often costly manufacturing process.[i] Recently "subsequent entry biologics", also known in some countries as "biosimilars", have become available in Canada following expiry of patent protection of some biologics.

While we always applaud the availability of new treatments, it is important for parents to understand the differences between biologics and subsequent entry biologics, and that changing medications without a full discussion with your child's health team could pose a health risk for your child.

The following information is to help parents understand the nature of biologics and subsequent entry biologics, and what questions to ask your child's health team and pharmacists to ensure your child is being treated with the best option.

What is a biologic medication?
Biologic medications are powerful targeted treatments that may often be the only effective treatment option for people with life-limiting illnesses such as rheumatoid arthritis, Crohn's disease, ulcerative colitis and many types of cancer.[ii] These medications are created in living

cells and many are produced using 'recombinant DNA technology', which involves tailoring DNA sequences to produce therapeutic proteins.[iii]

What is a subsequent entry biologic or biosimilar?
A subsequent entry biologic, also known as a biosimilar, is made by another manufacturer once the patent on the original biologic medication has expired. While the subsequent entry biologic is similar to the original biologic medication, it is not exactly the same because the way it is manufactured is different. According to Health Canada, which approves drugs for use in Canada, subsequent entry biologics should *not* be viewed as generic versions of the original biologics and should not be used interchangeably.[iv] We will likely see an increase in the number of available subsequent entry biologics because the patents on many biologics in Canada are beginning to expire.

Why are biologics more expensive than other drugs?
Biologics are able to treat serious illness in ways that other kinds of traditional or chemical drugs cannot. Producing biologics using living cells involves a complicated manufacturing process that is central to how biologics work. Even a small change to the manufacturing process can result in a change in the medication. These medications are fragile and must be transported correctly from the manufacturing site to the pharmacy and then to the patient. Biologics, which are considered "large molecule" therapies, must also be infused or injected as they will not be absorbed through the stomach and intestines.[v] This complexity in manufacturing, transportation and how these medications are administered is why biologics usually cost more than medications made of more stable chemical compounds that are easy to produce, transport and take by patients.[vi] While it is important that we understand the cost of a particular medication, we should still be focused on ensuring each child can receive the treatment that works best.

My child has never been given a biologic before, but my doctor said it's now our only option. Should we start with the subsequent entry biologic?
In the same way that biologics are different from subsequent entry biologics, each child's response will be different to different treatment options. In other words, what works for one person may not work for another with the same disease. Your child's health team will provide the best direction of what is right for your child. Be sure to ask them what clinical trials and research show in terms of response and adverse reactions for the option they are suggesting.

How will I know if my child has been given a biologic or a subsequent entry biologic?
This can be tricky because some of the names of the subsequent entry biologics can be similar to the original biologic medications. Ask your healthcare team or pharmacist whenever you pick up a prescription or are in the clinic, and keep an eye on the medication labels or write down the names of the medications your child has been prescribed. It is very important to know what your child is first prescribed – a biologic or a subsequent entry biologic – because it is important that your child stay on that medication and not switch mid-treatment without discussion with your health team.

Why is the subsequent entry biologic not the same if the ingredients are the same?
There are sometimes as many as 1,000 steps to making a biologic and even the smallest change to that process can change how the drug functions. This is important to understand because a

subsequent entry biologic is not manufactured exactly the same way as the original biologic, which means, while *similar*, it is not the same.[vii]

I have heard that switching medications can happen. What does interchangeability or switching mean?

The term comes from the practice of giving a generic medication in place of a brand name medication when Health Canada has designated a brand and generic drug as being the same, otherwise known as being bioequivalent. The substitution is often made at the pharmacy in response to what a particular drug plan will cover. Remember that subsequent entry biologics are not 'generic biologics' and Health Canada does not support automatic substitution with these drugs. The best thing to do is to have a clear discussion with your health team and pharmacist about your child's medication.

Parents of a child with an autoimmune disease, such as Crohn's disease or rheumatoid arthritis, need to be especially careful of a child being switched to a subsequent entry biologic or vice versa. As these newer drugs are only similar to the original biologic drug, the body's immune system may react to a change in therapy. If the new medication does not work as well as hoped and the child needs to move back to the original biologic, there is a possibility that the original biologic will not work as well the second time if the immune system is no longer able to tolerate it. Treatment options should always be discussed with your child's health team.[viii]

If my child was on a biologic and got switched to a subsequent entry biologic, is this a problem?

As the subsequent entry biologic is different than the original biologic your child may react differently to it. In some cases this may be fine and could lead to similar outcomes, and in other cases, it is possible your child may not do as well on the new drug. The possibility of moving back to the original drug should be discussed with your child's healthcare team. As some drug reactions are very subtle, parents should keep an eye on their child to see how they are faring on the new drug. You might have a bit of pushback from your insurance plan or pharmacy if the original drug is more expensive, but the best treatment option for your child is the one that works, not the one that costs less.

Will subsequent entry biologics be cheaper?

We do not know yet, but it seems unlikely there will be an enormous cost difference given the complexity of the manufacturing process for the subsequent entry biologic. It is important though that we not allow cost to drive treatment choices for our children. Each child should be receiving the best treatment option – regardless of price. If your pharmacist or insurance plan insists on switching, be sure to talk to your health team before starting your child on a new medication. If potential costs become a hurdle to treatment for your child there are different patient support programs offered by manufacturers of biologic medications. Each will differ slightly so please be sure to speak with your healthcare team to ensure that the right support program is chosen for your child – one that offers you the peace of mind that your child is getting the best care, attention and support to help manage their illness. Aaron's Apple is also here to help you navigate and consider your options.

Sources:

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