General Management

Feeding

- Feed the baby as upright as possible whether on the breast or bottle (a lactation consultant may be able to help you with this if you are breast feeding)
- Babies with reflux may be more comfortable drinking smaller feeds more often i.e. at 3 hourly intervals rather than 4 hourly
- Burp the baby frequently during feeds
- Babies with reflux may tolerate feeds more readily if they have a break mid-feed. This allows their stomach to empty a little before offering a second side.
- Leave the baby upright in your arms for 20 minutes after every feed

Positioning

- Avoid having the baby flat
- Elevate the head of the bassinet/cot to an angle of 30 degrees; this can be achieved by using bricks or telephone directories under the legs at the top, or by using a rolled up towel under the head of the mattress. Do the same with your change table and pram/stroller
- Use an upright sling or baby carrier when taking your baby out (these products also allow you to do other things with your hands). Avoid slings that position the baby curled up or flat.
- Avoid car trips soon after feeds as car seats and capsules tend to curl a baby up and increase pressure in the stomach
- Change nappies with your baby lying on their side rather than on their back aiming to avoid lifting the lower body in the air. Also keep nappy tabs loose so there is minimal extra pressure on the stomach

Maternal support

Many mothers find it distressing to spend long periods with a crying baby. You will need extra support from your partner, family and friends and should not be afraid to ask for it. A few mothers will develop post-natal depression with weariness persisting beyond the first two weeks, anxiety, loss of appetite and difficulty sleeping. If you think that you may be developing postnatal depression you should contact your GP or obstetrician straightaway.

Medical treatment

Treat underlying allergy – Many babies with complicated reflux have underlying allergy, most often to cow's milk protein (see other leaflet in this series). If this is treated, the symptoms of reflux can disappear

Mylanta/Gaviscon – Both these commonly used treatments are antacids, which neutralise the acid in the stomach. In babies, they are best used as short-term treatment as they contain high amounts of minerals. Typically, we use them immediately prior to every feed for one to two weeks as a 'test' to see whether complicated reflux is the cause for a baby's crying as they almost always work immediately in this situation. The normal liquid adult Mylanta is used at a dose of 1mL. For Gaviscon, there is an infant powder, which is made up with water, breast milk or formula and given at a dose of 5mL. Both are available across the counter without a prescription.

Esomeprazole (Nexium™) – This very safe drug is the mainstay of treatment for complicated reflux. It comes as a sachet containing granules which are added to 10 mL of water and stirred until thickened. The prescribed dose is given once daily. The remaining liquid is discarded (it can't be kept until the following day) and a new sachet is used for the next day's dose.

Omeprazole (Losec™) – This sister drug of esomeprazole was previously the mainstay of treatment for complicated reflux in babies. It is available as a suspension made up by compounding pharmacies but the tablets were never designed to be dissolved. The suspension has a very short shelf life and, as a result, has been superseded by esomeprazole in our practice.

Milk thickeners - Thickening agents can be added to milk which aim to make it less likely to rise up the oesophagus. Karicareô infant food thickener can be purchased at pharmacies and prepared in the following ways:

- *Breastfed babies* – add one teaspoon of Karicare™ infant food thickener to 20mL of expressed breast milk. Using a spoon or cup, give 10mL before the breastfeed and 10mL halfway through the breastfeed.
- *Formula fed babies* - add one teaspoon of Karicare™ thickener to every 100mL of prepared formula. You will need to use an increased teat speed to allow the thickened milk to flow. Anti-reflux (AR) formulas are available on the market but we do not recommend them.

Melbourne Neonatal Network

Gastroesophageal Reflux in Babies

Information Sheet for Parents

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Normal vomiting/positing

Most newborn babies regurgitate (or posit) a small amount of milk, usually immediately after feeds when they are being burped. This is quite normal and needs no treatment.

Abnormal vomiting

Some babies vomit much more than normal, both in terms of the frequency and volume of vomit. Many of these babies will have gastro-oesophageal reflux (GOR; also known as gastric reflux). The majority of these babies have 'uncomplicated' or 'simple' reflux and have no other symptoms; they remain happy and healthy, and grow well; usually no treatment is required.

Some babies will go on to develop 'complicated' or 'symptomatic' reflux, which can affect them in the ways described below. Both types of reflux tend to present in babies at about two months of age but can start earlier in life. The purpose of this leaflet is to help parents understand why their baby is behaving in this way and to describe our approach to treatment if required. It is not meant as an alternative to seeking medical attention and will always be used in combination with a medical assessment to ensure that 'reflux' is the cause of a baby's symptoms.

If a baby vomits blood, bright green bile or is losing weight in association with vomiting, then you should contact your GP or my consulting rooms immediately as this may suggest that something more serious may be causing the vomiting.

What is 'reflux'

Despite much medical research, no one really knows exactly why reflux occurs. In all humans, at the base of the oesophagus (gullet), there is a ring of muscle that keeps the contents of the stomach in place. Normally this ring is very effective; as adults we can do a handstand after drinking a glass of fluid without it running out of our nose and mouth! In some babies, this ring of muscle is not very effective and the contents of the stomach 'reflux' freely up into the oesophagus and the back of the throat. This results in a variety of symptoms.

Symptoms of 'uncomplicated reflux'

Vomiting is the commonest symptom of reflux. Milky vomits usually occur in the first 30 minutes after feeds but can still be happening several hours later, even just before the next feed. Vomiting tends to happen more if the baby is laid down flat soon after a feed and also if the baby is handled excessively. Sometimes the vomiting can be quite forceful and the amount large, although this is not necessarily an indicator of the severity of the reflux. Many parents hold their reflux baby upright for 15-30 minutes after feeds to help reduce the vomiting.

Regurgitation occurs when milk comes up out of the stomach into the back of the mouth; a vomit may not follow. The baby sometimes coughs and splutters, may grimace (because of the acidic taste) and then swallows the regurgitated milk again.

Hiccups are more common in reflux babies but are harmless.

Management of 'uncomplicated' reflux

Uncomplicated reflux generally does not require any treatment. 'A little vomit goes a long way' and parents often report that the baby has vomited his/her 'whole feed'. This is rarely the case and usually these (very content) babies put on weight very well. This has led to the term 'fat, happy vomiter'! Uncomplicated reflux is more of a 'social nuisance' than a medical problem; parents usually manage by buying numerous spare bibs and by carrying a 'vomit rag' with them at all times (they also tend not to wear dark-coloured clothing when handling their baby!). Propping the baby up at an angle in their cot and/or change table may also help (see later). Thankfully, this type of reflux is almost always a temporary problem and does not persist into later childhood or adulthood; it tends to improve by the time a baby is sitting upright and taking three solid meals per day, both of which generally happen by the age of six months.

Symptoms of 'complicated reflux'

Symptomatic or complicated reflux occurs when strong acid, which is quite normally produced by the stomach of all babies, comes up into the oesophagus. Why this should happen in some babies and not others is unclear. Reflux of stomach acid causes chemical irritation of the lower oesophagus; as well as vomiting, regurgitation and hiccups, it causes the symptoms described below:

Feeding difficulty – When babies feed, they are generally held horizontal (for breast feeding) or at a slight angle (for bottle feeding). This, combined with the surge of acid that the stomach produces to help digest the milk, tends to increase the reflux of acid into the oesophagus. Typically, a baby will start off feeding well, but then will stop and become unsettled with head turning, back arching and crying. This distress may limit the duration of the feed so that babies with complicated reflux will often feed for short periods but more frequently.

Irritability, excessive crying and/or distress – The parents of babies with complicated reflux often describe them as being 'difficult'. As described above, these babies have chemical irritation in their lower oesophagus (this feeling is like bad indigestion after a heavy meal in an adult). Babies cannot communicate this feeling apart from by crying. The distress is often worse towards the end of a feed and/or immediately after. Whereas most 'normal' babies are content and settled after feeding (often falling asleep in their mothers' arms), a baby with complicated reflux is often at their most unsettled at this time. The distress is often made much worse if the baby is laid flat to go to sleep and may be improved by holding the baby upright (this allows gravity to help return the acid to the stomach). Often, a vomit will clear the acid from the oesophagus relieving the distress; sometimes the opposite happens and a vomit will bring more acid up into the oesophagus making the distress worse. Some babies with complicated reflux will have periods of inconsolable crying with back arching; these episodes can be very difficult for a parent to manage.

Sleep disturbance – Babies with complicated reflux often sleep poorly. Having been difficult to settle after a feed (as described above), they will frequently awake screaming as the acid refluxes into the oesophagus. This cycle may recur leading to a disturbed sleeping pattern.

Despite the frequent vomiting, most babies with complicated reflux continue to gain weight well. Parents often worry that the poor sleeping pattern might lead to other problems in childhood but this is rarely the case. Symptoms of reflux are often temporarily worsened by illness (e.g. a cold or gastroenteritis) but settle again subsequently.