Gravidity and Parity Definitions (Implications in Risk Assessment)

The shorthand system of describing gravidity and parity has evolved based on local obstetric traditions; it may vary slightly between different communities and this can cause confusion.

Definitions

In the UK:

**Gravidity** is defined as the number of times that a woman has been pregnant.

**Parity** is defined as the number of times that she has given birth to a fetus with a gestational age of 24 weeks or more, regardless of whether the child was born alive or was stillborn.

For example, a woman who is described as ‘gravida 2, para 2 (sometimes abbreviated to G2 P2) has had two pregnancies and two deliveries after 24 weeks, and a woman who is described as ‘gravida 2, para 0’ (G2 P0) has had two pregnancies, neither of which survived to a gestational age of 24 weeks.

If they are both currently pregnant again, these women would have the obstetric history of G3 P2 and G3 P0 respectively. Sometimes a suffix is added to indicate the number of miscarriages or terminations a woman has had. So if the second woman had had two miscarriages, it could be annotated G3 P0+2.

- A **nulliparous woman** (nullip) has not given birth previously (regardless of outcome).
- A **primagravida** is in her first pregnancy.
- A **primiparous woman** has given birth once. The term ‘primip’ is often used interchangeably with primagravida, although technically incorrect, as a woman does not become primiparous until she has delivered her baby.
- A **multigravida** has been pregnant more than once.
- A **multiparous woman** (multip) has given birth more than once.
- A **grand multipara** is a woman who has already delivered five or more infants who have achieved a gestational age of 24 weeks or more, and such women are traditionally considered to be at higher risk than the average in subsequent pregnancies.
- A **grand multigravida** has been pregnant five times or more.
- A **great grand multipara** has delivered seven or more infants beyond 24 weeks of gestation.

Multiple pregnancies present a problem: a multiple gestation counts as a single event and a multiple birth should be interpreted as a single parous event, although this remains contentious. In a survey, only 20% of British midwives and obstetricians recognised a twin delivery as a single parous event - G1 P1 rather than G1 P2, revealing the potential lack of standardisation in our documentation [1].

A more elaborate coding system used elsewhere, including America, is GTPAL (G = gravidity, T = term deliveries, P = preterm deliveries, A = abortions or miscarriages, L = live births).

**Epidemiology**

The current total fertility rate (the average number of children a woman would have if she experienced the fertility rate of a particular year for her entire childbearing years) stands at 1.91 (2012 figures) [2].

Women are commencing their childbearing later and having fewer children in total. Women born in 1982 have had slightly fewer children (average 1.02) by their 30th birthday than women born in 1967 who had an average of 1.16 children by the same age.

More women remain childless (19% of women born in 1967 compared to 11% of those born in 1940). One in ten women born in 1967 had four or more children, compared with nearly one in five women born in 1940. The number of higher order grand multips has fallen significantly.

**Relationship of gravidity and parity to risk in pregnancy**

Obstetric histories should always record parity, gravidity and outcomes of all previous pregnancies because:

- Outcomes of previous pregnancies give some indication of the likely outcome and degree of risk with the current pregnancy.
- The number of previous pregnancies and deliveries will also influence the risks associated with the current pregnancy.
What is considered normal labour varies according to parity:
- Normal labour in a primagravida is significantly different to normal labour in multiparous women, as physiologically the uterus is a less efficient organ, contractions may be poorly coordinated or hypotonic. The average first stage in a primagravida is significantly slower than in a multiparous woman (primarily due to the rate of cervical dilation). Therefore, progress is expected to be slower but delay longer than expected should prompt augmentation in managed labour.
- Interestingly, grand multips have a longer latent phase of labour than either nulliparous or lower-parity multiparous women but then begin to dilate more rapidly. After 6 cm dilation, partogram curves for lower parity multips and grand multips are indistinguishable. Progress of labour does not appear to continue to improve with additional childbearing.

Risks associated with nulliparity/primagravidae
- Higher risk of developing pre-eclampsia (relative risk 2.1 with confidence interval 1.9-2.4)\(^3\).
- Delayed first stage of labour, although this could be considered normal in a primagravida.
- Dystocia (or difficult labour) was diagnosed in 37% of primagravidae in one Danish study\(^4\). Maternal age is an independent risk factor for dystocia, regardless of parity\(^5\).

Risks associated with grand multiparity
- Abnormal fetal presentation.
- Precipitate and preterm delivery although higher age is more significant\(^6, 7\).
- Uterine atony.
- Placenta praevia.
- Uterine rupture.
- Amniotic fluid embolism.
- Postpartum haemorrhage.
- Stress incontinence and urinary urgency symptoms\(^8\).

What is a high-risk pregnancy?
Risk equates to factors that increase likelihood of harm to mother or baby. There is no universally accepted definition of a 'high-risk' pregnancy and antenatal 'risk' screening cannot identify every pregnancy/labour that will run into complications. Usually risk factors are combined and weighted to try to match an appropriate level of medical care and intervention to a more risky pregnancy to attempt to reduce the chances of a poor outcome.

Confounding variables\(^9\)
Increased parity is often associated with:
- Increasing maternal age - particularly with levator ani dysfunction\(^10\).
- Lower socio-economic and educational status.
- Poorer prenatal care (more likely to be late bookers and poor attenders).
- Smoking and alcohol consumption.
- Higher body mass index (BMI).
- Higher rates of gestational diabetes.

It is not always possible to disassociate the various risk factors attributable to each factor.

Management

Primigravidae
Provide:
- Good antenatal care with particular vigilance to early warning signs of pre-eclamptic toxaemia (PET). The National Institute for Health and Care Excellence (NICE) recommends nullips with uncomplicated pregnancies should have 10 routine antenatal appointments (versus 7 in parous women)\(^11\).
- Good antenatal and parenting education, support during labour and pain control (if desired) are especially important in a first pregnancy, as anxiety levels are likely to be high.
- Where there is delay in the first stage of labour in a primagravida, active management is with artificial rupture of membranes and/or oxytocin to augment labour.
- The second stage of labour can be allowed to continue for longer than the traditional time associated with multips, as long as fetal monitoring is satisfactory and there is ongoing fetal descent.

Grand multigravidae
It is usually appropriate to book for delivery in a specialised unit. Consider:
- Iron and folate prophylaxis.
- A plan for the care of existing children during admission.
- Vigilance for abnormal fetal presentations from 36 weeks onwards.
- Planning for possible rapid labour and delivery.
- Monitoring strength of contractions and fetal presentation during delivery.
- Planning for the possibility of postpartum haemorrhage.
• Good physiotherapy and postnatal follow-up for urogynaecological problems.

Further reading & references

2. Total fertility rate; Office for National Statistics

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