

Results, outcomes and papers and abstracts that have acknowledged the Lauren Page Trust. A brief summary of key findings.

In short, we have made some major advances in understanding what causes this disease and how to treat it!

- New method of measuring different components of bile acids
- A new test to determine who is going to get the disease
- Accurately define how all abnormal tests change in the disease, and how these tests relate to things going wrong
- We have been able to demonstrate how a common treatment of the disease affects the baby, by measuring these abnormal substances in the cord blood (the same as the babies without having to take blood from it!)
- Women with OC have abnormal fats/lipids in their blood

The grant has made a substantial contribution to the evaluation of samples collected from a large cohort of women with obstetric cholestasis (OC):

1. This work has established a new technique in measuring bile acids (a key component of the disease), and we have been able to develop a new and accurate way of determining the different components of bile acids. This is really important, so we can work out which parts are causing the damage, as there are "good" and "bad" bile acids – we even use some to treat the condition.
2. We have established that a new liver function test (alpha GST) will tell us early on in pregnancy who is going to get the disease. As the key way to help these women (and babies) is to monitor closely, and deliver before problems, this allows us to be able to concentrate on those women who really need our help, and prevents lots of unnecessary investigations in the many women who itch, who are common!
3. By measuring many substances in the blood we now know the exact levels to worry about in OC. This is important, as these levels are different in pregnancy. This has also allowed us to determine which tests are related to things going wrong – previously we had no idea whether the abnormal tests actually were related to harm to the baby and mother (though we suspected it). They are.
4. Women treated have normal levels of liver function in the their babies. This tells us that this treatment is probably benefiting the baby.
5. One of the very surprising and possibly very important finding that we discovered, was that women with OC have high levels of lipids. This occurs before the disease is seen, and is noted even after the pregnancy. Women with abnormal fat metabolism are more prone to getting OC, and those with OC should be on the look out for risk factors for heart disease and stroke, and advised to reduce these as possible.

#### Abstracts

1. Dann AT, Kenyon AP, Seed PT, Poston L, Mallet AI, Shennan AH, Tribe RM. Gestational profiles of free, glycine and taurine conjugated primary and secondary bile acids in obstetric cholestasis and pruritus gravidarum. *J Soc Gynecol Invest* 2005; 12 (Suppl): 724A.
2. Dann AT, Kenyon AP, Seed PT, Poston L, Mallet AI, Shennan AH, Tribe RM. Development of a novel method for the simultaneous measurement of free and conjugated bile acids in human serum from pregnant women with obstetric cholestasis. *Physiology Society Meeting King's College London Dec 2004.*
3. Dann AT, Kenyon AP, Seed PT, Poston L, Mallet AI, Tribe RM, Shennan AH. Serum evaluation of glutathione s-transferase alpha may be a good indicator of adverse pregnancy outcome in obstetric cholestasis. *Obstetric Cholestasis Study Day, Imperial College London. June 2004.*
4. Dann AT, Kenyon AP, Seed PT, Shennan AH, Tribe RM. Longitudinal evaluation of biochemical markers for the early prediction of obstetric cholestasis. *J Soc Gynecol Invest* 2004; 11 (Suppl): 782A
5. Dann AT, Kenyon AP, Seed PT, Nelson-Piercy C, Girling J, Williamson C, Shennan AH, Tribe RM. Obstetric cholestasis is associated with an abnormal lipid profile. *J Soc Gynecol Invest* 2004; 11 (Suppl): 47A
6. Kenyon AP, Girling JC, Nelson-Piercy C, Williamson C, Tribe RM, Shennan AH. Biochemical severity in obstetric cholestasis may predict pregnancy outcome. *J Obstet Gynaecol* 2004; 24(supplement 1): S10.
7. Dann AT, Kenyon AP, Seed PT, Mallet AI, Shennan AH, Tribe RM. The relationship between maternal and cord sera bile acid profiles in obstetric cholestasis. *J Obstet Gynaecol* 2004; 24(supplement 1): S10.
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9. Kenyon AP, Dann AT, Girling J, Nelson-Piercy C, Williamson C, Tribe RM, Shennan, A.H. Cord liver function and bile acids in actively managed obstetric cholestasis (OC) are not abnormal. *J Obstet & Gynaecol* 2003; 23(Suppl 1):S47.
10. Dann AT, Kenyon AP, Seed PT, Mallet AI, Shennan AH, Tribe RM. Correction of cord serum bile acid profiles after treatment of obstetric cholestasis with ursodeoxycholic acid. Blair Bell Research Society Biennial Competition Meeting, 2003, London, UK.
11. Kenyon AP, Tribe RM, Girling J, Nelson-Piercy C, Williamson C, Shennan, A.H. (2002). Pruritus in pregnancy and identification of those at risk of obstetric cholestasis: a prospective prevalence study of 6531 women. *J Obstet & Gynaecol*. 2002; 22(Suppl):S21-22. \*\* Awarded Prize for Best Oral Presentation.
12. Kenyon AP, Tribe RM, Girling J, Nelson-Piercy C, Williamson C, Shennan, A.H. Pruritus In pregnancy and identification of those at risk of obstetric cholestasis: a prospective prevalence study of 6531 women. *J Soc Gynecol Investig* 2002; 9(Suppl):283A.
13. Kenyon AP, Tribe RM, Nelson-Piercy C, Girling J, Williamson C, Shennan, AH. Obstetric cholestasis: outcome with active management. *J Soc Gynecol Investig* 2001; 8(Suppl):95A.
14. Kenyon AP, Tribe RM, Girling J, Nelson-Piercy C, Williamson C, Shennan AH. Pruritis can precede biochemical abnormality in obstetric cholestasis: a longitudinal analysis. *J Soc Gynecol Investig* 2001; 8(Suppl):96A.
15. Kenyon AP, Tribe RM, Nelson-Piercy C, Girling J, Williamson C, Shennan AH. Pruritis can precede biochemical abnormality in obstetric cholestasis: a longitudinal analysis. *J Obstet & Gynaecol* 2001; 12(Suppl):S15. \*\* Award for Best Oral Presentation.
16. Kenyon AP, Tribe RM, Nelson-Piercy C, Girling, J, Williamson C, Shennan AH. Obstetric cholestasis: outcome with active management. *J Obstet & Gynaecol* 2001; 12(Suppl):S55.

#### Papers:

1. Tribe R, Shennan A, Dann A, Poston L, Wierzbicki A, Kenyon AP and Seed P. Plasma lipid profiles of women with intrahepatic cholestasis of pregnancy. *Obstetrics and Gynaecology*. Sept 2005 **In press**
2. Anthony T. Dann, Anna P Kenyon, Paul Seed, Lucilla Poston, Andrew H. Shennan and Rachel M Tribe. *Glutathione S-transferase and liver function in intrahepatic cholestasis of pregnancy and pruritus gravidarum*. *Hepatology*. 2004 (04): 1406-1414.
3. A Kenyon, C Nelson Piercy, J Girling, C Williamson, R M Tribe, A H Shennan *Obstetric Cholestasis outcome with active management: a series of 70 cases*. *British Journal of Obstetrics and Gynaecology*. 2002;10: 282-288. (Corresponding author) ISSN 0306 5456
4. A Kenyon, C Nelson Piercy, J Girling, C Williamson, R M Tribe, A H Shennan *Pruritus may precede abnormal liver function tests in women with obstetric cholestasis: A Longitudinal analysis*. *British Journal of Obstetrics and Gynaecology*. 2001;108: 1190-1192. (Corresponding author) ISSN 0306 5456
5. Anna P Kenyon and Andrew Shennan. *Obstetric Cholestasis*. *Fetal and Maternal Medicine Review*. 2004; 15:3 1-26 c.