Looking into the pregnant woman's eye

To the Editor—I read with interest the recent article by Chung et al[1] discussing the use of ophthalmic medications during pregnancy. The authors are to be congratulated for preparing such a comprehensive, well-referenced, and timely publication on this subject. The authors, however, also indirectly reminded us of how little is known about the visual changes associated with normal, or indeed abnormal, human pregnancy. I wish to comment on pregnancy-associated ophthalmic changes.

Visual disturbances are not uncommon in otherwise healthy pregnant women.[2] Although some ocular changes associated with pregnancy may offer insight into the pathophysiology of a pregnancy-specific disorder (eg pregnancy-induced hypertension) or a non–pregnancy-specific disorder (eg glaucoma or diabetes), most visual changes in a parturient woman are of a benign nature; they warrant no ophthalmic referral and require no medical intervention.

Park et al[3] followed 24 healthy women throughout pregnancy and found an increase in the corneal curvature during the second and third trimesters. The curvature either resolved post-partum or after the cessation of breast-feeding. Weinreb et al[4] measured the corneal thickness in 89 healthy pregnant women and found an increase by about 3% in comparison with the control group of non-pregnant women. The increase was attributed to increased water retention during pregnancy (secondary to changes in the hormonal milieu).

Despite the successful use of contact lenses prior to pregnancy, some women develop contact lens intolerance during pregnancy.[1] This pregnancy-related contact lens intolerance is unlikely to be due to an increase in corneal sensitivity. Conversely, corneal sensitivity either remains unchanged or decreases in pregnancy, possibly relating to water retention.[2] The intolerance may actually be due to an increase in either corneal curvature or thickness associated with pregnancy.[3,4] These findings have led to the recommendations that pregnant women should delay fitting new contact lenses until several weeks post-partum.

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Use of hair analysis in diagnosing heavy metal poisoning

To the Editor—I am writing with reference to the article by Poon et al[1] in the June 2004 issue of the *Hong Kong Medical Journal*.

The World Health Organization (WHO) stated in 1990 that fish and fish products are the dominant sources of human exposure to methylmercury.[2] After ingestion, about 95% of the ingested methylmercury is absorbed by the intestine, and distributed to all tissues within about 4 days.[3] Relative to its concentration in the blood, the concentration of methylmercury is 5 times greater in the brain, and 250 times greater in hair.[4] Once in the central nervous system, methylmercury can be demethylated to inorganic mercury, which has a long half-life, measured in years.[5] Methylmercury crosses the placenta freely and has devastating effects on the foetal brain. Effects in both adults and foetuses are dose-related, but the foetus is 5 to 10 times more sensitive.[6]

International authorities like the WHO (1990, 2003), the United States Environmental Protection Agency (USEPA) [1997], US CDC/ATSDR (1999), the European Commission (2001), and the Queensland Government Public Health Service (2002) have documented and recognised the use of hair in the monitoring of chronic dietary methylmercury exposure. The rationale is that the structure of the hair is permanent and once a heavy metal atom is incorporated into it, the atom is irrevocably fixed there. Hair concentrations of methylmercury are proportional to blood concentrations at the time the hair strands were formed.[2] Since scalp hair grows at an average speed of 1 to 2 cm per month, hair elements analysis can thus provide a temporal record of element metabolism that has occurred during the previous 1 to 10 months. Blood samples are useful primarily in cases of acute high-level exposures to mercury, but are not reliable as an indicator of total body burden in longer-term exposures.[7] Urine samples are believed to reveal mercury exposure over the previous 2 to 3 months. Mercury excretion after a dose of chelating agent reflects the body burden better than basal excretion.[6]