

第五章例 1:Hemophilia A carriers

$X_1 = \log_{10}(\text{AHF activity})$

$X_2 = \log_{10}(\text{AHF-like antigen})$

正常组: $n_1 = 30$; 携带组: $n_2 = 22$

$$\bar{x}^{(1)} = \begin{pmatrix} -0.0065 \\ -0.0390 \end{pmatrix}, \quad \bar{x}^{(2)} = \begin{pmatrix} -0.2483 \\ 0.0262 \end{pmatrix}$$

$$S_p^{-1} = \begin{pmatrix} 131.158 & -90.423 \\ -90.423 & 108.147 \end{pmatrix}$$

例 1:Hemophilia A carriers

(1)

$$\begin{aligned} W(\vec{x}_0) &= \left(\vec{x}_0 - \frac{1}{2}(\bar{x}^{(1)} + \bar{x}^{(2)}) \right)' S_p^{-1} (\bar{x}^{(1)} - \bar{x}^{(2)}) \\ &= -2.01 < 0, \end{aligned}$$

因此, $\vec{x}_0 = (-0.210, -0.044)'$ 为携带者.

例 1: Hemophilia A carriers

(2) 当 $p_1 = 0.25, p_2 = 0.75$ 时,

$$\begin{aligned} W(\vec{x}_0) &= \left(\vec{x}_0 - \frac{1}{2}(\bar{x}^{(1)} + \bar{x}^{(2)}) \right)' S_p^{-1} (\bar{x}^{(1)} - \bar{x}^{(2)}) \\ &= -2.01 < \ln \left(\frac{0.25}{0.75} \right) = -1.10, \end{aligned}$$

因此, $\vec{x}_0 = (-0.210, -0.044)'$ 为携带者.

