CHAPTER 1

INTRODUCTION
INTRODUCTION

Normal testicular function is best judged by sperm and testosterone production in seminiferous tubules and Leydig cells respectively. These two functional attributes of the testis are characteristically confined to two separate anatomical sections, tubular and interstitial compartments of the testis. This is often termed as the compensated Leydig cell failure characterized either by low testosterone or low testosterone to LH ratio. In such conditions where spermatogenic damage is severe, it is also accompanied by inadequate response of the Leydig cells to hCG stimulation.

Findings from the animal studies further supported the observation. Irrespective of the intervention used to induce hypospermatogenesis, testosterone levels both serum and intra-testicular decline leading to a rise in LH concentration in the serum. It is not clear at this stage as to whether the Leydig cell dysfunction resulting lower testosterone production resulted from a direct effect of the agent used to cause the spermatogenic damage or whether it was secondary to the impaired seminiferous tubule function. However, this and several other findings have led to the concept that there exists intercommunication network between compartments of the testis and improvement in the functional competencies of one would definitely help augmenting the function of the other.

Similarly, subjects undergoing chemotherapy retain the risk of impaired testicular function which may also be due to Leydig cell dysfunction. In either case, the presence of the androgen deficiency must be recognized and treated appropriately. The treatment options may vary. An easier option mode would be through hCG stimulation of Leydig cells but if the response is poor, exogenous testosterone supplementation may help in augmenting spermatogenesis. Excepting this, there are no other options available at present for restoration of Leydig cell function leading to stimulation of spermatogenesis in adults. It is therefore pertinent to look for intervention modes that would help to restore Leydig cell function leading to revival of spermatogenesis and sperm production. Use of natural products as a source may also be explored as the risk of adverse effects using them is always considered negligible.