Bölüm 2

DİABETES MELLİTUS HİSTOPATOLOJİSİ

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GİRİŞ

Diabetes mellitus, insidansı tüm dünyada endişe verici bir oranda artan ağır ve kronik bir hastalıktır. Hastalığın ortalığa çıkmasında genetik yatkınlık önemlidir ancak tek başına insidanstaki bu artışı açıklamaya yeterli değildir. Çevresel faktörler ve/veya çevresel uyaranlara verilen yanıtlarda meydana gelen değişiklikler de insidans artışına katkı sağlamaktadır. Hastalık sürecini etkileyen faktörleri daha iyi anlayabilmek için öncelikle hastalığın merkezindeki organa, yani pankreasa odaklanmak gerekmektedir. Diabetes mellitus histopatolojisi ile ilgili günümüzde sahip olduğumuz bilginin büyük bir bölümü deneysel hayvan modelleri ile yapılan çalışmalardan elde edilmiştir ancak hayvan ile insan pankreas dokusu arasında adacık mimarisi, innervasyon ve damar sistemi bakımından büyük farklılıklar bulunmaktadır. Bununla birlikte, pankreasın *in vivo* olarak erişilemez olması ve cerrahi müdahalelerin önemli riskler barındırması, insanlardaki detaylı histolojik çalışmaları engellemektedir. Bu nedenle, ancak formalinle fikse edilmiş ve parafine gömülmüş pankreas otopsi materyallerinin retrospektif olarak incelenmesi yoluyla hastalık hakkında değerlendirme yapılabilmektedir. Son yıllarda histokimyasal ve immunohistokimyasal tekniklerdeki gelişmeler ve etiyolojik faktörler konusundaki bilginin artması sayesinde özellikle pankreas dokusu üzerinde hedefe yönelik histolojik çalışmalarda artış görülmektedir. Bu bölümde, endokrin pankreasın histolojik özellikleri ve diabetes mellitusta ortaya çıkan patolojik değişikliklere yönelik literatürde yer alan veriler bir bütün olarak değerlendirilerek insanlarda hastalığın histopatolojisi aydınlatılmaya çalışılmıştır.

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toksik etkiye sahip olan amiloid, ER stresi ve oksidatif stresin artmasına neden olarak hücrelerin ölümüne yol açar. β-hücre kaybı T2DM adacık patolojisinin bir karakteristiği olmakla birlikte hastalığın ortaya çıkmasında bu olayın etkisi azdır. Çünkü hayatta kalan az sayıdaki β-hücresi vücudun T2DM'den korunması için yeterlidir. Bunun yerine β-hücrelerinin azalması hastalığın şiddetinin artmasına neden olur. T2DM'de β-hücrelerinin aksine α-hücrelerinin hacminde bir artış görülür. Ancak bu artış hücre replikasyondan ziyade mataplazi kaynaklıdır çünkü hastalarda ortaya çıkan metabolik stres β-hücrelerinin α-hücrelerine trans-diferansiye olmasını uyarır ve sonuçta hiperglukogonemi ortaya çıkar.

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