

まとめ

本研究では、韓国高齢女性における有酸素性運動の健康指標に及ぼす影響を検討する目的で、60歳以上の高齢女性に対して長期間の有酸素性運動トレーニングを行い、特に生活習慣病と密接な関係をもつ、1) 左心室機能および血清脂質、2) 免疫機能、3) 骨折因子である骨密度と身体動揺、4) 脂質代謝、5) 血圧調節ホルモンなどに及ぼす影響について調査し、韓国高齢女性の健康と有酸素運動との関係についてそれぞれ検討を行った。

第一章では、有酸素運動の左心室機能、血清脂質に及ぼす影響を検討した。その結果、体重と体脂肪率などの体格要素は有酸素性運動トレーニング 36 週後に有意に改善された。様々な左心室変数においては有意な差は認められなかったが、最大酸素摂取量は有意に増加しており、左心室機能以外の因子による心肺機能の改善が推察された。さらに脂質代謝においては総コレステロールと中性脂肪、低密度リポタンパクコレステロール、動脈硬化指数、Apolipoprotein (Apo) B は有意に減少し、高密度リポタンパクコレステロール、Apo A-I は有意な増加を示し、脂質代謝を改善することが明らかになった。

第二章では、免疫機能に及ぼす有酸素運動の影響を検討した。その結果、運動群でリンパ球活性度およびヘルパーT 細胞とサプレッサーT 細胞の比率が有意に増加したことから、長期間の有酸素運動トレーニングは高齢女性の免疫機能を向上することが示唆された。

第三章の高齢女性の骨密度および身体動揺に及ぼす影響の検討では、運動群の大腿骨頸部および大転子の骨密度は有意に増加し、さらに骨吸収を示すデオキシピリジロ

リンが有意に低下したことから、有酸素性複合運動は高齢女性の骨吸収を抑制し骨密度を向上させることを見出した。また、重心動揺においても総軌跡長や平均軌跡長、X軸方向重心変位が有意に減少しており、これらは重心動揺を安定させることにより転倒予防力を高め、高齢者の骨折因子を改善することが示唆された。

第四章では、脂質代謝への有酸素運動の影響をさらに深めるべく高脂血症の患者を対象に有酸素運動トレーニングを行い検討した。その結果、最大酸素摂取量および最大酸素脈の増加から心肺機能の改善が再確認され、また、総コレステロールと中性脂肪、低密度リポタンパクコレステロール、動脈硬化指数、Apo-Bの有意な減少と、高密度リポタンパクコレステロールおよびApo A-Iの有意な増加から脂質代謝の改善が認められた。すなわち、高齢女性においても適切な有酸素運動トレーニングは動脈硬化因子を低下させ、さらに抗動脈硬化因子を増加させることによって、高脂血症患者の動脈硬化性疾患を予防、または治療するのに有効であることが示唆された。

第五章では、高齢女性の血圧調節への有酸素運動の影響を明らかにするため、高血圧患者を対象に長期間の有酸素運動を行った。その結果、運動トレーニングは収縮期および拡張期血圧ともに有意に低下させ、ノルエピネフリンやアンジオテンシン II、レニン、アルドステロンなどの血圧調節ホルモンの血中濃度も有意に変化させたことから、高血圧の液性因子の改善を通して血圧降下に効果的であることが示唆された。

以上のことから、長期間の有酸素運動トレーニングは韓国高齢女性において有酸素性体力の向上はもちろん、脂質代謝や心機能、免疫機能を改善し、骨密度や転倒予防力を高め、さらに血圧を低下して、高脂血症や高血圧を初めとする様々な生活習慣病の予防に非常に有効であることが示唆された。

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